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Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

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EDITORIALS

THE LEGISLATURE MEETS SOON.

In January the State Legislature will meet. There is considerable evidence that unusual efforts will be made to remove the legal barriers that are designed to protect the public against half-educated practitioners of the healing art. Members of the State Society are strongly urged to get in touch at once with their senators and assemblymen and remind them that the regular medical profession demands that standards be NOT LOWERED. We feel it the duty of the State to see that only educated and completely trained physicians are provided for the public. The regular medical profession is not trying to limit the number of *educated* practitioners, but it is striving very hard and will keep on striving to limit the number of half-educated licentiates to the smallest possible minimum. The State Board of Medical Examiners is the principal barrier that stands between the public and a large number of insufficiently trained representatives of various sects and cults clamoring for admission to the unlimited practice of medicine and surgery without being obliged to meet the requirements demanded of graduates of reputable medical schools. Use your influence to see that your representatives in the State Legislature fully understand the situation. Probably the safest course would be to see that the present law is left intact. If it is changed in any way there is danger that it will be weakened. Now is the time to impress upon our lawmakers the fact that protection of the public instead of a letting down of the bars, is demanded by a united medical profession.

MALPRACTICE INDEMNITY FUND.

It is with some degree of satisfaction we are able to announce that the necessary number has been secured to place this scheme in operation. We have now three hundred in the list and there is a gradual daily increase.

It is probable that some have overlooked this opportunity for insurance, or have deferred the matter until the plan proved possible by attaining the number required. To such we appeal for action at this time. The list of subscribers will go to the Council at the meeting of January 7th.

For information address the office of the Medical Society of the State of California, 930 Butler Building, San Francisco.

DOCTOR PHILIP MILLS JONES.

How few of us can do things that others cannot. Were you or I to die to-morrow what difference would it make? Our immediate relations might mourn perhaps, and the man whose appendix we removed yesterday might feel distressed at the idea of the interne's doing the dressings while your successor was being sought; your wife, perhaps, would have to economize, perhaps even give up the car,—but at bottom, what difference would it make? Do you think that the doctors who inherit your practice would not attend your patients just as well as you did, or better—is there anything that will stop, anything that will be left undone because you are dead? No,—Stevenson's "To be honest, to be kind" is a modest demand indeed. It takes more than that, and other than that; and the being honest and kind may not be so essential to a man's worth at all.

Work, that is the thing. And how few do work that others cannot; make things, do or write or say things that others cannot.

It was strange to pass the State Society's offices; they had that look of the unknown that sudden and shocking events impart to the most ordinary and intimate objects. To hear a typewriter rattling and to think of him who used to dictate—to see files and stacks of letters, malpractice suits and judgments coming in, and to think of him whom they used so vitally to interest. To think of the complex fabric of the State Society that he had woven, the JOURNAL, the Medical Defense, and all he had done to bring the profession together, to think of questions critically concerning them, and of what they meant to him,—and to us—his work lying undone, and he caring no longer.

Doctor Jones will be missed. Who is there to do his work? to combine law and medicine and organizatory talent; to bring to them an even and justly balanced intelligence, industry and a knowledge of dealing with men.

"To be honest, to be kind"—yes—but more than that—"Work while it is called Today; for the Night cometh wherein no man can work."

The Night hath come, and we are groping for a guide.

MEDICINE AND PHYSIOLOGY.

A prominent authority, writing a few years back on the failure of internal medicine to advance *pari passu* with surgery, said, and with much truth, that the answer was to be found in the slow growth of physiology. Many of the most fundamental questions are quite unsolved;—the whole story of the work of the liver, the largest cell aggregate in the body; the *modus operandi* of local vascular control, which, if it could be wrested from the subconscious employment of the individual to the conscious direction of the physician, would remake the science of treatment; these and many other great problems await the answer of the physiologist before internal medicine can be ranged along with chemistry or mechanics in the domain of knowledge. On the other hand, it is unfortunately true that the average practitioner pays little attention to physiology after leaving college. When reading his medical journal he may be all attention to some minor improvement in surgical technic while scarcely glancing at a physiological discovery, the application of which might be of infinitely wider range in his daily practice. Much of this neglect is due to the failure of teachers to impress the student with the fact that health and disease are equally aspects of the science of function. Also it is unfortunate that the results of investigation are frequently presented in language technically correct, but not in the vocabulary of the average practitioner.

These thoughts were evoked at this time by reading the extremely important paper of Dr. W. B. Cannon, in the Journal A. M. A. for November 18, 1916 (No. 21), on "Recent Studies on the Ductless Glands," wherein the problem of how emotional states induce pathological conditions receives a partial solution. From these investigations it would appear that various motor and secretory effects are evoked by the intermediation of glandular secretions which first receive the stimulus from the nervous system. That normal organs probably offer an average resistance to such secretions which is only overcome by extra secretion or the lowering of the resistance. In this case lowered resistance would be synonymous with heightened sensibility which grows with its exercise. So a pyloric spasm or a hyperchlorhydria evoked at first with difficulty by high emotional stress, might by repetition become a permanent condition maintained in activity by the amount of its particular glandular stimulant normally present in the blood.

Such researches and conclusions are of the highest importance and of direct clinical application. It is in this field of interrelation between the psychic and physical organism that the Christian Scientists and other empirics have attained their greatest successes. But the patients that are thus occasionally benefited by the indirect effects of a crude philosophy should receive from us the direct benefits of scientific knowledge rationally applied.

H. D'A. P.

ON PATIENTS.

Daudet, in his romance "Sapho" speaking of the power of the physician in modern times, says that he is the "last priest, the supreme belief, the invincible superstition." Daudet was a layman, you know—But we! We unlock our office doors, glance at the pile of mail on the well-elbowed desk, poke our heads into the waiting-room and begin the afternoon's work. That's our side of it—a drab and prosy undertaking to the most of us. But what is it to those waiting the other side of the door?—thumbing disinterestedly over the tattered leaves of a 1910 number of "The Cosmopolitan." It has been so long since we ourselves have sat on the other side of doors, since we embarrassedly shifted our positions on the chair, studied the figures on the rug, looked up at the pictures, and embarrassedly exchanged glances with our fellows-in-waiting. Do we remember what it feels like,—to sit there and wait, wait for an opinion that means life or death to some dear one, perhaps? Do we ever recognize the odds we have over our patients,—the feeling of security that accustomed surroundings, an ease acquired by constant dealings with the sick,—to say nothing of the respect tolled us as members of a learned profession—the sense of security that all these give? Do we appreciate the advantage that has come to us, not through our own efforts, but unearned and unmerited largely, has been placed at our doors like a foundling, born of noble men's work;—quiet men, working in far-off laboratories;—Listers and Pasteurs and Robt. Kochs?

How many of us put ourselves in the patient's place?—the average man amongst us I mean—not the rarefied psycho-analyst, but just the average doctor; we dress our patient's wounds, or give them a prescription, or take their blood-pressures, and say good-day;—and what do they mean to us? . . . cases, suffering men and women, daily drudgery, or, rarely enough, I am glad to think, money, tires for the car, daily bread. Do we ever realize our father-confessor roles? the "dernier pretre" that Daudet speaks of. What makes that little frightened woman tell you, my dear Doctor, things she would not confess, even to her husband or her lover? A feeling of trust, and of your being able to help her. Yes, perhaps,—a little of that, we hope. But much more than that, the office, the strange and shiny instruments surrounding you, the preternatural powers of insight into human folly she imbues you with,—no, not you, but the work of Lister and Pasteur and Koch living in you; the acumen in detecting lies she invests you with;—not *your* acumen, you know, but the "invincible superstition," the heritage of Hippocrates and other priests who have gone long before you. That is what brings out her pitiful trusting confession, and makes you its harborer.

Hippocrates, Paracelsus, Pasteur, Lister, Koch;—honor the little woman in their memory!

. . . AND THEIR RECORDS.

What's all this for? . . . For this! We were in a colleague's office the other day. Out on his desk, right before our eyes, where we could not

humanly help seeing it, lay a history. The history of our colleague, Dr. X., Wassermann . . . and the diagnosis "incipient paresis." Dr. X. has since died in an asylum. That was not fair to Dr. X., to leave notes of this kind where a possible rival could see them. Again; your stenographer, what sort of notes do you dictate her? It is good to keep accurate office records, of course, but is it fair to let little Miss Typewriter know that Mr. A. got that chancre extramaritally? Is it fair to give her the responsibility of holding tight in her white-uniformed breast, against all feminine temptations of divulgence and hinting all sorts and kinds of family secrets and rattling skeletons. What is the difference, medically, where A. got his chancre;—or why a chancre in your history, why not an "ulcus durum"? The extramarital confession had best be kept in the memory, or if you must put it down on paper, do so that not everyone who reads may know, in Latin, abbreviations, Choctaw or anything else you happen to be conversant with. So . . . don't make unfair use of the unearned advantage the medical progenitors mentioned in the preceding paragraph have bequeathed you,—if you must keep non-medical records keep them yourself, but better yet, don't keep them at all.

WALKING FOR HEALTH.

It is no doubt true that physicians are prone to emphasize insufficiently the therapeutic virtues of sunlight, fresh air, dietetics and exercise. But the same is equally true of society in general. The time has happily passed when the lady of fashion and the man of leisure risked their social and aesthetic position by engaging in sports and physical exercise. The truth is permeating rapidly through the social fabric, that attention to these primary requisites of sane living will do more to insure against disease and disability therefrom than any cure or manner of treatment undertaken when the disease is established.

It is not alone in the field of cardiac therapeutics that walking under graduated conditions is a definite therapeutic device of particular value. The large proportion of sedentary workers, especially in professional and business lines, need the advantage to be derived from proper walking in no small degree. The evils of intestinal stasis and all the other conditions due more or less to lack of muscular tone and activity, can best be attacked by this old reliable nearly forgotten practice. It may be a direct agency in combating old age as well as in warding off infections by increasing personal resistance. The individual who avoids venereal infection, alcohol, and worry, and who walks regularly and wisely, is in a fair way to live longer and more happily than his less discerning neighbors. Walking is such a plebeian and simple accomplishment that it has not been properly evaluated as a preventive and therapeutic measure.

Fortunately the old order is changing, and walking clubs and a fashion of walking to work in the morning are becoming a fad. May the fad increase and become a national habit. The attention being devoted to this subject by the New York department of health is promising and is in line with the strategic and far-sighted health policy of that organization. Why should not the practicing physician be not only an exponent of the art of walking but also an advocate who would influence the organization of walking clubs, and of special interest along this line in schools and among the younger generation? It is a democratic exercise, it fosters a clear mind and a vigorous body, it is within the reach of every person who is yet within the scope of preventive therapeutics. Let us have more walking and all that goes therewith.

There is walking, however, which is a travesty on an honest name, and the dawdler who pines for the cushions of the motor and follows his stomach with slouching shoulders and hasty breath, is not the type we propose. With feet straight from heel to toe, a long springy up-on-the-toes gait, and deep regular nasal respiration, a different tale is told, and advantage accrues to the walker subjectively and physically. Let there be more walking, and let physicians lead in the practice and exposition of walking for health and pleasure, and they should be synonymous, as a modern art.

A. C. R.

HEALTH INSURANCE.

The Social Insurance Commission of the State of California, in compliance with the provisions of the law by which it was created, held public hearings in San Francisco on November 20, 21 and 22. The testimony of individuals representing almost every walk in life was sought, and in addition to the witnesses summoned, any person present was privileged either to take the stand or to ask questions. The hearings were well attended, and proved to be of exceptional educational value. Dr. Rubinow, the Commission's expert, cross-examined all witnesses, and on the last day of the hearings was cross-examined by many of them.

The Commission for several reasons has chosen health insurance for its special study: (1) Sickness is the largest single cause of destitution. (2) A scheme of health insurance would benefit a larger group of wage-workers than could be reached by any other branch of social insurance, and at a lower cost. (3) The existing compensation act covers occupational disease; health insurance is but another step forward.

As a result of its study, the Commission favors the principle of health insurance. No bill can be introduced at this time, as a constitutional amendment is necessary. The Commission will draft and incorporate in its report, an enabling amendment sufficiently broad to permit of future legislation dealing with any branch of social insurance.

The report will in all probability be presented late in the first half of the session. The recess will give legislators ample time to consider and study the problem, before being called upon to decide whether or not to present the amendment to the people of the State. And if they favor the amendment, the voters too will have ample time in which to think about and discuss social insurance. Only after the voters express themselves as favoring social insurance in a general way, can

a health insurance bill be introduced in the Legislature.

The desirability of insuring against the direct and indirect cost of sickness is admitted by all. The disagreements come when details are discussed. As a result, employers oppose it, fearing the addition to the cost of doing business. Employees too, object to the cost. They furthermore object to its being compulsory, without being universally so. They state that it might interfere with their fights for higher wages. They fear that once the State embarks on the principle of meddling in the purely personal affairs of wage-workers, there will be no limit to the meddling. They fear that if industry be made to share the burden, it would lead to examination of employees and rejection of the physically imperfect. They consider the unemployment question vastly more important.

Insurance men oppose, and will continue to oppose, any health insurance measure, until assured that they will be permitted to write such insurance. They opposed Workmen's Compensation in the same manner. It is fairly certain that the Commission will recommend the exclusion of companies run for profit from the health insurance field. The reasons for and against cannot be discussed here. There is a great deal to be said on either side of the question.

Fraternals and similar bodies were not very well represented at the Commission's hearings. They know, from foreign precedents, that if they live up to the standard requirements, they have no reason to fear any curtailment of their present rights and powers, under any health insurance scheme.

The medical profession of this State had no opinion to express at the hearings, i. e., no opinion that could be considered official. This, it is true, applied to the other various elements concerned. Organized labor in California has not yet gone officially on record, and the American Federation of Labor is at present trying to arouse its members to the need for work along the lines of social endeavor. Employers, too, know little about these new things. Those of the profession who attended the hearings (and there were several who attended all of them) and testified, did so in a purely personal way. Our county societies have not studied the problem long enough; they will no doubt ere long have more or less definite views; their delegates will be instructed accordingly, and at Coronado, we will in April have a full discussion.

It is up to the profession to work out that part of any health insurance measure that concerns itself. If the profession feels that it is satisfied with present conditions, it can say so. But if it thinks that with 34 States taking up industrial accident insurance in a few short years, it is not unlikely that the people sooner or later will want health insurance, then let the profession decide upon the terms under which it will serve.

In next month's issue, we will attempt to give some of the arguments pro and con, the various points *sub judice*, as well as facts and figures at hand, which are of importance in discussions of proposed measures. R. B.

DOCTORS' INCOMES.

Remarkable statements are constantly being made relative to the incomes of physicians. At the recent hearings of the Social Insurance Commission, a labor man stated that the organized labor man probably averaged $1000 per year—doctors less. He seemed to attribute this to lack of organization and fiercer competition. No authentic figures have ever been presented to us, as to incomes of physicians in the United States. In California, fees are much higher than in the east. If they are high, they should not be lowered by health insurance acts. If they do not afford adequate incomes to the profession, insurance acts should try to improve the situation. Over 1000 cards have been received in reply to the postals recently sent out in an effort to get data on this topic. Have you sent in yours? If not, please do so at once! The more replies, the more accurate the statistics. Please do it—NOW. R. B.

ALCOHOL.

Very recently spirituous liquors have been banished from the National Guard of California. This is in line with the current course of events the world over. The warring nations of Europe have banished liquors from the fighting forces in the field. France, Russia and England have by decree banished alcoholic beverages from common use.

A majority of the States have gone dry in this country, and it does not require much astuteness to foresee universal prohibition for the United States of America.

This is not an argument for prohibition or for temperance, but a brief reference to the rapid progress of current events leading up to universal discard of alcohol as a food, medicine, or beverage.

Scientific investigation has demonstrated beyond question that alcohol is not a food, that it lowers temperature, and decreases the mental and physical power in ratio to the amount consumed.

The knowledge is worldwide, that alcoholic beverages are absolutely prohibited to Arctic explorers or Arctic workers. Alcohol, ethyl alcohol, is the potent blend in all beverages, from champagne down to steam beer.

The change that has taken place in the medical profession in regard to the use of alcohol as a medicine, and the abuse of it as a beverage, is so marked that it occurs to the writer that a brief calling attention to it, in the JOURNAL, which is the mouthpiece of the thought and action of the profession, is proper and necessary.

It is largely due to the scientific investigation of our profession that the great universal change is taking place.

Making a note of the change, and recording it, is not an argument for or against the loss of business to the manufacturer and salesman of alcohol as a beverage. Much can be said pro and con, and we leave it to others to say it.

FEES FOR INDUSTRIAL ACCIDENT WORK.

In another column we publish a letter from the medical director of a group of casualty companies. What do you think about the principles involved? Do they measure up with your standard of morals? Does your standard of morals measure up with them? We are not particularly interested as to whether one of us "cuts" fees or not. Each one is entitled to work for such a price as he thinks is adequate compensation for his services. But is splitting fees any more right when an insurance company is a party to the transaction than it is right between two of us?

And from the business point of view—what? Are some insurance carriers attempting to buy medical services in the cheapest market and below the "market prices"? Does not the attitude maintained by the doctor show that in one case, at least, these carriers must content themselves with a second choice, the market value of the preferred article being normal and fixed?

And from the standpoint of a harmoniously organized medical profession—think it over seriously in the light of this question: What action do you wish your Society to take about the matter of a fee schedule for services rendered under the Workmen's Compensation Act at the meeting next Spring?

What are the reasons that some insurance carriers are trying "to buy below the market" when the matter of medical services is concerned? There can be but two: an attempt to make their possibly already sufficient profits greater, or the impossibility of making it pay at the present premium rates. The private casualty companies as a group are complaining that they are losing money, and that the cost of medical service is much too high; so that we are forced to the conclusion that in order to come out at least even, rather than reduce the cost of doing business by reducing the brokerage commissions and other sales expenses, the idea is to "take it out of the doctor."

Now is the time to do something.

REGULATION OF THE PRACTICE OF MEDICINE. CIRCULAR LETTER SENT TO STATE SENATORS AND ASSEMBLYMEN IN 1915.

The following circular letter was sent early in 1915 when the Legislature had under consideration numerous bills designed to regulate the practice of medicine. All of the stock arguments presented by the representatives of various freak sects and cults who, with strong backing, were trying to lower medical standards, are answered herein. The same situation will arise this year and the same old arguments (including the "poor boy" plea) will be used, so the letter to follow may be of interest at this time:

Dear Sir:

By reason of my position as President of the State Board of Medical Examiners and a teacher in the Stanford University Medical School and also on account of having had considerable experience in this work, I am addressing you in the hope that the following will be of interest:

The laws regulating medical licensure are part of the general educational system of the State. No one will deny that a *good education and experience* and a *good moral character* are essentials for the making of physicians capable of rendering the best service to humanity and that poorly trained and inexperienced doctors are a serious menace to the public health. The best physicians are those who have had a sound preliminary education and a four years' good medical training, followed by a year or more of hospital and clinic experience. Their work is most certainly far more dependable than that of the insufficiently educated so-called "practical" physician. Those who claim that there is a demand for "practical" although half educated "doctors" for the "common every day citizen" are insulting that great mass of the people who give stability to our Government. They would hardly have the temerity to come right out and say that the best educated doctors are for the wealthy class and the half-trained practitioners are good enough for the laboring man; but that is what they mean in demanding that standards be lowered so that most anybody may assume the responsibility of looking after the afflicted. The poor boy who has the right stuff in him stands just as good a chance as anybody. Free scholarships are available in all of the good medical colleges and special opportunities for earning money in vacation and other times are offered in addition. Most of the medical students in Stanford University are poor boys working their way through college. The purely commercial schools run for financial profit, do not give these free scholarships. It does not pay them and eats up their profits.

The better element in the medical profession is not attempting to "cut down competition." To the contrary it is anxious to see the number of *well educated physicians* constantly increasing and the public is behind them in this movement. The problem is purely an educational one. It does not matter what system of medicine a man wishes to practice as long as he has a good basic education to begin with and a thorough medical training extending over, at least, four years. A person with such a training will be able to make accurate diagnoses and will have a good understanding of the many processes of disease so that he will be able to meet and be equal to the grave responsibilities that come to every physician. Think of the great danger to which a community is subjected when a doctor through ignorance does not recognize smallpox, scarlet fever, typhoid, diphtheria, or other contagious or infectious diseases until long after many citizens have been exposed to the same! Every man and woman who enters upon the study of medicine should have adequate education and *no matter what system* he proposes to practice he should be required to come up to a certain standard. The present Medical Practice Act requires, in addition to a high school education, one year in chemistry, physics and biology. This is little enough when one considers that all the best medical schools in this country and abroad require some college education before entering upon the study of medicine and many of them require, in addition, one year's active experience in a hos-

pital before granting the right to practice medicine. At one time our country was backward in medical education as compared with the European countries; but for some years past conditions have rapidly improved so that now the best American medical educational institutions are equal to the best in Europe and improvement is constantly going on. A majority of the States have raised the requirements of the medical laws in accordance with the universal tendency of the times. Our present medical law of California recognizes this fact, in that its requirements increase as the years go on. Had this not been accomplished, California would have been the only State in the Union *that would have gone backward* instead of forward in educational matters. California is abreast of the times in everything else, so it is hardly to be expected that she would follow in the ways of those who would lower standards (as some individuals would have us do). It cannot be too strongly asserted that we are in a life-saving business in that we are trying to protect the public from incompetent, unscrupulous, untrained "would-be" doctors. The safest physician is the one with *good education and experience.* It is the right of every citizen to demand that his doctor shall have *ample training and experience.*

The State Board of Medical Examiners is *the only barrier that stands between the public and a great horde of would-be practitioners of medicine.* The main function of the Board is that of *protecting the public.* State Boards of Medical Examiners have the power of approving or disapproving of a college. Obviously this is necessary *for the protection of the public;* otherwise commercial concerns, for the purpose of turning out "doctors" every few months, would thrive in large numbers all over the land. Even as it is there are too many of these "diploma mills." If the power of approval or disapproval of medical educational institutions is taken away from the Board you might as well abolish the Board altogether. It cannot be said too often that the problem is an *educational one.*

The State assumes a very grave responsibility when it officially gives an individual the right to practice medicine and surgery, for the average individual cannot determine whether or not one holding a license from the State has had the proper education and experience to place his life in his hands.

Senate bill *No. 443* and Assembly bill *No. 544* are the result of careful study by experts and based on the experience of the present Board in trying to work out the problem under the present law and in the best interests of the great public whom we have taken oath to protect. Therefore you are respectfully urged to carefully consider the features of this bill before voting upon any of the bills presented to regulate medical practice. Any points that are not clear will be taken up gladly upon request.

Very truly yours,
H. E. Alderson, M. D.,
San Francisco, Cal.,
President State Board of Medical Examiners.
January, 1915.

IMPORTANT NOTICE

The Scientific Program Committee begs to announce that this is a tentative program only. Also that the subject-matter in this announcement was sent in for publication on December 12, 1916.

PROGRAM.

Tuesday Morning, April 17, 1917.

1. Address and Reports of Committees.

President's Address.
Report on Public Policy and Legislation.
Report of Committee on Public Health.
Report of Committee on Arrangements.
Report of Committee on Scientific Program.

Tuesday Afternoon.

2. Tuberculosis Symposium arranged by Dr. R. A. Peers.

Titles received too late for publication.

2-B. General Session.

Dr. Harold W. Wright, San Francisco: Some obscure conditions causing peripheral nerve pain, with case report.

Dr. E. H. Falconer, San Francisco: (Title received too late for publication.)

Dr. D. D. Crowley, Oakland: (Title received too late for publication.)

Dr. R. E. Bering, San Francisco: Report and results of 1000 cases of alcoholism.

Dr. C. B. Hare, San Jose: Some gastro-intestinal problems.

Wednesday Morning.

3. Surgical Section.

Dr. E. J. Clemons, Los Angeles: Internal hemorrhoidal operation and after care under quinine-urea anaesthesia.

Dr. Arthur L. Fisher, San Francisco: Painful conditions in and about the shoulder joint, their diagnosis and treatment.

Dr. James T. Watkins, San Francisco: The value and limitations of the moving picture in teaching surgery; with demonstrations.

Dr. Paul S. Campiche, San Francisco: Correction of malunited fractures.

Drs. L. W. Ely and J. P. Cowan, San Francisco: The formation of new cartilage in joints.

Dr. S. J. Hunkin, San Francisco: Fracture of the femoral neck.

Dr. Chas. G. Levison, San Francisco: Employment of intramedullary bone splint in fractures.

Wednesday Morning.

3-B. Medical Section.

Dr. Rex D. Duncan, Los Angeles: Radium—its local application as a therapeutic agent.

Dr. Walter W. Boardman, San Francisco: Hodgkin's disease and its treatment.

Dr. E. C. Dickson, San Francisco: Botulism.

Dr. Geo. H. Evans, San Francisco: Multiple serositis; report of a case; discussion of its classification.

Dr. F. F. Gundrum, Sacramento: Rat-bite fever.

Prof. W. H. Manwaring, Arthur H. Meinhard and Yoshio Kusama, Stanford University: Analysis of the anaphylactic reaction by means of the isolated mammalian heart and the isolated mammalian lung.

Wednesday Afternoon.

4. Eye, Ear, Nose and Throat.

Session of general interest arranged by Dr. Hans Barkan.

(Titles too late for publication.)

4-B. Genito Urinary Symposium.

Arranged by Dr. Alfred B. Grosse.

(Titles received too late for publication.)

Thursday Morning.

5. Surgical Section.

Dr. F. W. Birtch, San Francisco: Surgical risk from the standpoint of group study.

Dr. A. B. Cooke, Los Angeles: Exophthalmic goitre; indications for surgical interference, choice of procedure.

Dr. Leo. Eloesser, San Francisco: Injuries of peripheral nerves.

Dr. Stanley Stillman, San Francisco: (Title received too late for publication.)

Dr. Clarence Moore, Los Angeles: (Title received too late for publication.)

Dr. Saxton Pope, San Francisco: (Title received too late for publication.)

5-B. Medical Section.

Dr. A. W. Hoisholt, Napa: Motor phenomena in certain classes of insanity demonstrated by moving pictures.

Dr. J. Henry Barbat, San Francisco: Permeability of the meninges to arsenic in paresis and tabes.

Dr. Herbert C. Moffitt, San Francisco: Ulcerative colitis.

Dr. Samuel H. Hurwitz, San Francisco: On the treatment of hemorrhagic conditions.

Dr. W. H. Strietmann, Oakland: Magnesium sulphate intravenously in various septicaemias.

Dr. Jau Don Ball, Oakland: The relation of medicine to criminology.

Thursday Afternoon.

6. Symposium on Functional Pathology.

Arranged by Dr. Fitch C. E. Mattison.

(Titles received too late for publication.)

6-B. Medical Section.

Dr. John Carling, Los Angeles: Infantile paralysis.

Dr. Rachael Ash, San Francisco: Mongolian idiocy.

Dr. Langley Porter, San Francisco: (Title received too late for publication.)

Dr. John Colliver, Los Angeles: (Title received too late for publication.)

Dr. E. Fleischner, San Francisco: Some problems in starch digestion in childhood.

Dr. H. H. Yerington, San Francisco: (Title received too late for publication.)

Eye, Ear, Nose and Throat Section.

Arranged by Hans Barkan.

Dr. Hans Barkan, San Francisco: Lantern slide exhibit of eye cases with comments on diagnosis and treatment.

Dr. Edward Cecil Sewall, San Francisco: Report of a case of otitic meningitis.

Dr. M. W. Fredricks, San Francisco: Otosclerosis of the ear.

Dr. Philip H. Pierson, San Francisco: Tuberculosis of the eye.

Drs. Walter Scott Franklin and E. F. Glaser, San Francisco: A case of congenital aniridia as a familial sequence.

Dr. Adolph Baer, San Francisco: Headache and secondary systemic disturbances caused by intra-nasal and nasal sinus conditions.

Drs. H. B. Graham and W. L. Draper, San Francisco: Carcinoma of the larynx.

Dr. C. F. Welty, San Francisco: Report of an unusual ear case.

Dr. Harvey McNaught, San Francisco: Congenital occlusion of the nose; original method of operating.

Dr. J. M. Shook, Oakland: Some new points in the technique of the submucous resection.

Dr. Wm. F. Blake, San Francisco: The treatment of certain eye lesions with subconjunctival injections of autogenous serum.

Dr. P. A. Jordan, San Jose: What can we do to improve our business methods?

Dr. H. Staats Moore, San Francisco: Report of a case of deafness of seventeen years standing, with seeming recovery.

Dr. John J. Smith, San Francisco: Clinical observations of cataract operations.

Dr. Grant Selfridge, San Francisco: Intranasal cosmetic surgery.

Dr. C. M. Hosmer, San Diego: (Subject to be announced later.)

Dr. Lloyd Mills, Los Angeles: (Subject to be announced later.)

Dr. F. A. Burton: (Subject to be announced later.)

Dr. Henry Horn, San Francisco: (Subject to be announced later.)

Dr. F. C. Pounds: (Subject to be announced later.)

Tuesday, April 17, 1917, 2 P. M.

Section on Urology.

Arranged by Dr. V. G. Vecki

Dr. T. G. Clark: (Title received too late for publication.)

Dr. A. C. Cecil: Pyelitis of pregnancy.

Dr. Wm. E. Stevens: Etiology and treatment of frequency of urination in women.

Dr. V. G. Vecki: Chairman's address.

Wednesday, April 18, 1917, 9:30 A. M.

Dr. Ralph Williams: (Title received too late for publication.)

Dr. Martin Krotoszyner: Practical value of the complement fixation test for gonorrhoea.

Dr. Granville MacGowan: (Title received too late for publication.)

Dr. Frank Hinman: An analytical study of 47 perineal prostatectomies.

Thursday, April 19, 1917, 10 A. M.

Dr. W. B. Dakin: Moving pictures of suprapubic prostatectomy.

The following letters sent by the secretary of this committee to the members of the society who have procured places on the program explain themselves:

My dear Doctor:

I am writing to every member whose name appears on the Scientific Program for April. For this reason I must write you a circular letter instead of a personal one.

If you have already sent in your title and synopsis kindly cast this letter into the waste-basket. If you have not sent in the title of your paper with a synopsis, I would beg to call your attention to the important notice on page 467 of the December State Journal. The regulations therein contained will be enforced without favor to anyone. The committee does not wish to be considered hard or unfair, but there is a very long waiting list of members who are anxious to appear on the program but who have been excluded because of lack of space. When a member is dropped from the program because of failure to send in his synopsis, the first on the waiting list in point of time will be given his position.

Hoping that you will realize the position of the members of the Program Committee and lend us your assistance, I am

Fraternally yours,

Dear Doctor:

I have been instructed by the Committee on Program to write you and the other participants in the program who contemplate showing moving pictures, of the following ruling of the Committee on Scientific Work:

It has been ruled that no pictures will be accepted which have been previously exhibited at other society meetings. Pictures must be shown before the State Society for the first time.

Very truly yours,

A. B. GROSSE, Chairman.
R. A. PEERS, Secretary.

REMEMBER CORONADO

IN APRIL

MEDICAL SOCIETY,

STATE OF CALIFORNIA

MEETS

APRIL 17th

DOCTOR PHILIP MILLS JONES.

In Pericles, the master of all literature bade Cerimon to voice the ideal aim of all medical men:

"Cerimon:
I held it ever
Virtue and cunning were endowments greater
Than nobleness and riches; careless heirs
May the two latter darken and expend;
But immortality attends the former,
Making a man a god. 'Tis known, I ever
Have studied physic, through which secret art,
By turning o'er authorities, I have—
Together with my practice—made familiar
To me and to my aid the blest infusions
That dwell in vegetives, in metals, stones;
And I can speak of the disturbances
That nature works, and of her cures, which
doth give me
A more content in course of true delight
Than to be thirsty after tottering honour,
Or tie my treasure up in silken bags,
To please the fool and death."

Act III, Scene 2.

Is this not the life of Doctor Philip Mills Jones? Did he not have endowments greater than riches? Through the long, hard days of his youth did he not turn over authorities? In his serious hours did he not possess justice and truth? Who can say that he was ever thirsty after tottering honor?

We all know that he refused honorable affluence in other walks of life and each refusal gave him "a more content in course of true delight" and spurred him on to greater efforts for our common good.

He did not tie his "treasure up to please the fool and death." His principles were never bartered for gain. No man dared set a price upon his loyalty or his honesty of purpose.

Heavy is our sorrow when we realize that he was coming to his own: that the reward for work well done was to be the knowing of the complex combination of the lock of fame.

In a little while he would have opened the door. In a little while we would have heard his acclaim and witnessed, with pride, his past opponents gathering to seek forgiveness and to declare their full and grateful appreciation of his years of silent, selfless work.

Storm-tossed upon the jealous sea of life, he battled for the unseen port. With hand on helm, and with no other hand to help, he despaired not; yet the shock of the wave was great and the wheel *would* spin! Not long ago a radiant light fell full upon the blue lapping waters of the harbor of understanding, and a voice commanded him to pour out the oil of kindness and consideration upon the angry sea. He obeyed, and straightway sailed into this haven, and the joy of victory was with them.

Again they "put out" to sea, bound for the harbor of greater endeavor, but Fate ordained that they, hand in hand, without fear, and with wondrous love, should sail to the Unknown Port.

J. Wilson Shiels.

DOCTOR PHILIP MILLS JONES.

CAT.

DOCTOR PHILIP MILLS JONES.

It is still a strange thought to me that I have outlived Philip Mills Jones. In the little transient thought that I ever gave to the matter it was natural to think of him as sometime writing about me, dead—it seems almost unnatural for me to be writing about him, dead.

I do not want to be thought of as writing an obituary. I do not intend that. I wish to tell a little of the ways in which Phil Jones showed himself to me—for it was my privilege to have known him well through many years and not a few experiences.

We all knew of his mental ability—a quick apprehension, excellent understanding and sound judgment, and an alertness that gave him constant advantage. But probably relatively few knew that the book he most admired was Herbert Spencer's "First Principles." And in his speaking of it he did not characterize it as instructive or profound or fundamental, or as having any of the qualities one would expect to be attributed to this tome. He spoke of it as fascinating, as being a book one could not put down until he had finished it. He could not stop his mind from thinking with Spencer's mind until the latter had completed the thought, and no ordinary mind is capable of the feat of following enthusiastically, from point to point, the thought train of that master. Nor did everyone know that Jones was a book collector, nor did I really know it until after the fire of 1906, when he said —in a light way, but with a sad strain in it— that his books had made a very satisfactory pile of ashes, and that he would be content with that and not buy any more. Then I found that book-collecting had been one of his passions and extravagancies, especially books about aboriginal California, and that his collection had been of no mean value. That he had been interested in the ethnology of the Californian Indians I knew, for shortly after his first exploration of Indian mounds, under the auspices of Mrs. Hearst, it was my duty to present a paper before the Chit Chat Club, of which I had but a short time before been made a member, and I obtained the club's permission to invite Doctor Jones, who was not a member, to join me in the preparation and reading of the paper. And this he did, both supplying me with the facts from which I made my share of the paper and covering the floor of the club dining room with the remains of dug up Digger Indians to illustrate his part.

It is quite a step from ethnology to electrical science, but Jones was the man who first in California repeated the experiment of Roentgen. He was commissioned to do this for the "Examiner," and he repeated his demonstration at the next following meeting of the County Medical Society. I remember it particularly well, perhaps, for I was on the program of the evening, and was very properly swept incontinently to one side while he made a radiogram of some coins in a purse. That was the first time the thought came to many of us, that opacity was a relative and not an absolute matter. From that time for several years he was closely connected with radiography, and was probably among the first in the country to be formally a radiographer. I know that he always claimed that he was the very first to assert that lupus could be cured by Roentgen rays. His interest in electricity was broader than in radiography alone, for he was engaged, about this time, in the preparation of a text-book on the subject, and was teaching medical electricity in the Medical Department of the University, but other work intervened, and the book was never finished, while the teaching was dropped.

All this while he was, in medicine, an ophthalmologist, and that he was well posted in his specialty is shown by the praise accorded to another ophthalmologist for his contribution to a book on diseases of the eye, but which contribution he employed Jones to write. I very well remember his amused delight over the whole matter. I do not think his practice was all-absorbing to him or very lucrative, though he often spoke of having had some very influential people as patients. I am sure that no phase of medical work, as a mere office practice, could have held him; the detailed personal service must have wearied him. At any rate he very readily gave it up to become a free lance—radiographer, promoter of constructive legislation, newspaper writer and ethnologist—and so spent a number of years until he came to the JOURNAL.

I came to know him and understand him best at and after this time of the starting of the JOURNAL. No one will doubt for a moment but that the JOURNAL, as he left it to us, is the best criterion of the real Phil. Jones. It was never intended to be simply *a journal*, it was intended to be a particular kind of journal, and it has always been such. It has always had a distinct motive—has always followed a thought-out plan. Jones' interest in sociology has tinctured every word he ever wrote for it, and if one reads carefully it is easy to see it running through all his editorial paragraphs and articles. It was this that made his JOURNAL the most frequently quoted of all the monthlies, and also more frequently than many weeklies, and gave it easily the premiership of all the journals conducted by state medical organizations. One of the elements that attracted was that his sociology was always of a practical type, paying but little attention to academic discussion, but ever looking for means of improving conditions between the members and the groups of the medical profession, and between that profession and the laity it serves, along lines where progress is wont to travel. Experimentation was, of course, permissible, as in his treatment of industrial accident insurance methods, but the experiments had to be by rational methods that gave all human promise of leading to the desired results.

Early in the history of the JOURNAL, that is, from 1903 to 1906—both inclusive—George H. Evans and I made, with Jones, a majority of the publication committee. Others who were on the committee with us varied from year to year, but

the retention of us three during these four years made a continuous policy a practical thing. Our first big work was the reformation of the advertising methods of the medical press. I say "our first big work," taking to ourselves some of the glory, but Jones did all the writing, got all the obloquy and finally all the praise, while Evans and I merely backed and supported him. The crusade created much bitterness at first, and one famous editor was so much incensed at what was said about his journal that he would neither speak nor write to Jones, and when circumstances made it imperative that there should be some communication I was made the intermediary, the editor writing to me and I replying after consultation with Jones. This story would be most incomplete if I did not add that as time showed that the California contentions about advertisements were correct, the editor and Jones again became friends and were such to the end. It must be remembered that in this campaign Jones, actually single-handed and in a new journal with no established prestige, changed the advertising policy of every decent medical journal in the country; a great feat, for it cost many journals thousands of dollars to give up the profits of their reprehensible contracts, and cull their advertisers as they did their contributors.

At heart Phil. Jones was always on the side of the man who was down—the man who was disappointed or a failure, and he always rejoiced at the young man who was climbing up. I am sure many a man has gone to him with the puzzles or problems of his life and found quick sympathy and an earnest desire to help. In this he made the JOURNAL distinctly of advantage, for he developed its service to the profession along all the lines where such development was possible.

It seemed to me that he had a remarkable capacity for work, and I know that work was his gospel, and to it he would turn from the maddest whirl of jest and riot of merriment—and he loved both of these. As an evidence of his ability to work, it may be told—for it is no secret—that his first attempt at admission to the Bar was a failure; but he reacted to it as to a tonic and re-prepared himself, without neglecting the JOURNAL or the Society or the American Medical Association, and finally passed at the head of his class and was ready for further service to the profession when he was taken ill.

It is a trite thing to say that his place cannot be filled. No man's place can be filled. But a second man may take the first man's work and do it in his own way, practically making a new place. The place that cannot be filled is the one in our lives that this man had made. I am confident it must be with others as it was with me. So long as he was sick I felt for him, when they told me he was dead my feeling was for myself, for I had received a burden of loneliness that I know I shall never lose.

And then comes, in the December JOURNAL, his wish expressed to us for a Merry Christmas and a Happy New Year—and the jubilation that we are all alive, when he, dear man, is not—so that the wish—his last for us—comes to us, literally, from his grave, and we can all be most certain that, wherever the consciousness which we knew as Phil. Jones may exist, that wish is just as keen and living as it was on the day he wrote it for us to read it in this December.

HARRY M. SHERMAN.

ORIGINAL ARTICLES

DIABETES IN PREGNANCY, WITH REPORT OF CASES.

WM. A. BEATTIE, A. B., M. D., Sacramento.

In clinical importance diabetes in pregnancy ranks next to albuminuria. According to statistics quoted by Edgar[1] this complication causes abortion or premature delivery to occur in thirty three per cent. of the cases. Thirty per cent. of these cases die from coma, and twenty per cent. die within two years following confinement, making a total mortality of fifty per cent. The prognosis, therefore, has been extremely grave for both mother and child.

These statistics, however, were gathered prior to the year 1915. Since that time a more rational treatment has been inaugurated by Dr. Allen[2] of the Rockefeller Institute, and it is reasonable to expect a very gratifying change in the mortality records where this method of treatment has been employed.

There is no difference between diabetes mellitus uncomplicated by pregnancy, and diabetes mellitus in pregnancy so far as the treatment of the diabetes is concerned. The Allen treatment is based entirely upon the knowledge gained by laboratory experiments and investigations. Allen has shown that by partial removal of the pancreas, with a preservation of the pancreatic duct so as to avoid atrophy of the remaining portion of the gland, a condition can be produced which most satisfactorily resembles that observed in diabetes as seen in the human being. The intensity of the disease in the animal may be made to vary according to the amount of pancreatic tissue which has been destroyed.

The following unique and interesting explanation of diabetes is here quoted from a recent article by Dr. Allen:[3] "Diabetes is commonly looked upon as a progressive, fatal disease. Of course in one sense it is a disease. But in another sense, it may be beneficial to implant the idea in both physicians and patients that diabetes is not a disease. There is no evidence that it is an infection, or an auto-intoxication, or anything else of that order. So far as I am aware, an inherent downward tendency has never yet been demonstrated in typical cases. For practical purposes, we may well keep to the simple idea mentioned above, that diabetes is merely the weakness of a bodily function; namely, the function of assimilating certain foods. It may be compared with indigestion. A weak stomach (this term is, of course, meant only in the usual colloquial sense, to signify the digestive function) may never become a strong stomach, but there is no cause for death unless the patient abuses the weak organ.

The possibility and perhaps the probability exists that a weak pancreas is something analogous. Every person has his weak point, and ultimately breaks down at some one point, rather than everywhere simultaneously. If diabetes is a weakness of the pancreatic function, we can understand why the breakdown is most frequent in elderly persons, but generally most serious in young persons. This idea began with Naunyn. If a person overtaxes a weak stomach, the resulting distress punishes the error and forces him to desist. If he overtaxes a weak pancreas, nothing but intelligence can show him what is wrong. If there were no prompt reflex mechanism to prevent and punish overtaxing the digestive function, doubtless the death rate from indigestion would be fully as high as the death rate from diabetes now is, and indigestion might appear as a progressive fatal disease, for which all sorts of explanations and all sorts of remedies would be offered. Many a dyspeptic sits at the table and longs for pleasant-tasting food, but dares not eat it because of the immediate penalty. Many a diabetic sits at the table and longs for certain food, and perhaps eats it, even though he knows better. This is merely an illustration that the lower nerve centers are often more effective in controlling conduct that the higher centers. But if the conception is correct of diabetes as a simple weakness of a bodily function without inherent downward tendency, then if the patient is obedient, he may be kept from going downward simply by preventing him from overtaxing his weakened function. The weak pancreas may never become a strong pancreas. The patient may never be entirely normal again. But if our idea is fully correct, this precaution may save life."

During the past two years I have had four cases of glycosuria develop during pregnancy. Two of these were mild; no symptoms developed, and the sugar cleared up immediately after confinement. The other two cases, which I report in detail, were of a more severe type, and were associated with the typical symptoms and signs of diabetes mellitus.

Case 1. Age 22. First seen June 15, 1914. Became pregnant in April. Family history was negative; also her past history. She was married in 1909, and had one child four years old. So far as she knows this was a normal pregnancy and a normal delivery. From November, 1911, to March, 1914, had three induced miscarriages. From June, 1914, the patient was kept under observation, and urine analysis made every two weeks. No abnormalities were noted. On December 14th, a complete physical and pelvic examination was made. The foetus was active, heart sounds clearly audible. Position L. O. A. The last urine analysis on December 1st was normal. I was unable to procure a sample on the date of examination, but a sample was promised to be sent to the office next day. On December 21st, I was called to the house and the patient gave the following history: On December 18th she noticed a peculiar twitching and quivering of the foetus, after which she felt no further movements. Next day polydypsia was very pronounced. She experienced a sensation of extreme depression. She noticed also that she was passing more urine than normal. On examination no foetal movements could be palpated, and foetal heart sounds were not audible. Temperature was 96.8; pulse 100. Urine analysis: Specific gravity 10.30, acid, sugar 2.5, no albumen, no casts, diacetic acid slight trace. On December 24th labor was induced and a still-born babe delivered. Patient made an uneventful recovery. Urine analysis following confinement is as follows:

12/25	Sp. Gr. 1028	Sugar 1.2	No diacetic Acid
12/26	" " 1024	" .6	" " "
12/28	" " 1018	" .4	" " "
12/31	" " 1016	" .1	" " "
1/9	" " 1016	" .0	" " "

The patient was put on regular diet on January 11th and the urine watched regularly to February 11th. At that time patient was advised to report to the office at stated intervals. On May 12th, 1915, she reported at the office complaining of hunger, thirst, frequent urination and extreme lassitude. She also stated that she had missed her April period. Examination showed that pregnancy was in about the sixth week. Urinalysis: Sp. Gr. 1036, acid, sugar 4.2 vol. three quarts, diacetic acid strongly marked. Patient was put on rigid diet and kept under close observation until May 28th. The sugar did not entirely disappear from her urine. On consultation it was decided to interrupt pregnancy because: First, her past diabetic history with pregnancy; second, only four months had elapsed since the last pregnancy; third, failure to react favorably to treatment.

Following this pregnancy she was never able to return to a general diet. At this time I tried the Allen method of treatment. After the starvation period, carbohydrates were increased to toleration and with care the urine remained sugar-free. In November, while on a visit out of the city she disregarded her diet and when she returned sugar was again present in the urine. After six days' starvation the urine became sugar-free and a routine diet was again established. Early in January of this year she was influenced to take up Christian Science and she died in diabetic coma on January 26th.

Case 2. Age 23. Married three years. First seen March 14, 1914. Last menstrual period December 7, 1913. First pregnancy. Family history negative, past history negative. She had the usual diseases of childhood but no other illnesses. The urine continued normal up to May 4th, when the Sp. Gr. registered 1031, Fehlings was reduced, no diacetic acid. Patient was placed on a starch-free diet and the sugar became gradually less in amount. On August 11th Sp. Gr. 1014, sugar very slight reaction, no diacetic acid. On September 8th a normal delivery occurred, and by October 10th the urine was sugar-free and the patient was put on a regular diet. On March 17, 1915, I was called to the house, and the patient complained of extreme depression, headache, great thirst and frequent urination. On examination, I found the uterus enlarged, suggesting about the third month of pregnancy. It was extremely soft and boggy. Urinalysis Sp. Gr. 1032, sugar 4; diacetic acid strong reaction. In spite of diet, only a very slight improvement occurred, and after consultation on March 22nd, it was decided to terminate pregnancy. By April 1st the urine had become sugar-free and has remained so ever since. No pregnancy has occurred since that time.

The first significant point is that while in case No. 1 diabetes did not appear until the last month of pregnancy; in the second pregnancy it appeared early in the second month. In case No. 2, sugar appeared in the urine during the sixth month of the first pregnancy, while in the second pregnancy, sugar and diacetic acid appeared in the third month.

Again, in both cases the symptoms of diabetes were decidedly more aggravated in the second pregnancy, and in case No. 1 a severe diabetes developed which persisted after pregnancy terminated.

Using the analogy of Dr. Allen previously quoted, that a diabetes is a sign of a weak pancreas just as distress and indigestion after eating signifies a weak stomach, it seems reasonable to assume that in the second pregnancy the pancreas was much weaker than in the first. It also suggests that in some way pregnancy threw an extra burden on the pancreas.

The most recent addition to the literature on this subject is a series of fourteen cases reported and discussed by Joslin.[4] None of these cases, however, were recent enough in order that the Allen treatment might have been tried. Fasting was tried in one case in the series, resulting in a decrease in sugar. Quoting Joslin on this case, he says, "Pregnancy occurred for a third time in April, 1905, but this time the quantity of sugar was not as easily controlled as before. It is interesting that the patient was fasted one week by Dr. Taylor in his efforts to lower the sugar, and as a matter of fact it did decrease to 2.1%. But in August it was 6.7%. In October, 1905, the six month of pregnancy, 5.8% of sugar was present."

In analyzing these fourteen cases I find:

Two died in coma; one committed suicide on becoming pregnant the second time; two are still alive but with diabetes; one had diabetes much worse in the third pregnancy, tuberculosis set in one month before her death, and sugar disappeared from her urine the day before her death; three had one pregnancy, are now alive and well; three had three pregnancies, sugar in each pregnancy, now alive and well; one had two pregnancies, sugar in each pregnancy, now alive and well; one had two pregnancies, sugar beginning in the eighth month in the first pregnancy, and in the second month in the second pregnancy.

Of the four cases that died, three of the number had diabetes before pregnancy occurred, while eleven cases developed diabetes during pregnancy.

Taking the sixteen cases reported in this paper, only fifty per cent. were free from diabetes at the time of the reports, and of these, nineteen per cent. had only one pregnancy. Fifty per cent. either have died or still have diabetes. Eighty-one per cent. developed diabetes during pregnancy.

Conclusions.

1. If sugar, even in the slightest amount, appears in the urine during pregnancy, the Allen treatment should be begun at once, since this method of treatment has met with the most favorable results in uncomplicated diabetes.

2. If the sugar does not disappear under this treatment, pregnancy should be terminated.

3. Whether pregnancy sets up a latent diabetes is as yet not proved. In many cases, however, where diabetes has developed in pregnancy, a succeeding pregnancy causes an earlier and more aggravated recurrence of the diabetes, which, in some cases, persists after the termination of pregnancy.

4. Pregnancy occurring in a diabetic offers a more grave prognosis than diabetes occurring in pregnancy.

5. Unless a carbo-hydrate equilibrium can be absolutely maintained in a diabetic woman, she should be advised to avoid pregnancy.

Bibliography.

1. Edgar, Prin. and Practice of Obstetrics, p. 344.
2. Allen, Treatment of Diabetes. Boston Med. and Surg. Jour., Feb. 18, 1915, p. 243.
3. Ibid.
4. Joslin, Diabetes in Pregnancy. Boston Med. and Surg. Jour., December 2, 1915, p. 841.

USE OF WHOLE BLOOD IN HEMORRHAGE.*

By H. R. OLIVER, M. D.
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It was the original intention to deal only with the intramuscular injection of whole blood in the treatment of hemorrhage. But on reviewing the literature on this subject, I found it necessary to wander into the different hemorrhagic diseases and consider their causes and some of the different methods of treatment of these conditions by sera.

At present we are unable to make a classification, as we do not know the causes of the so-called hemorrhagic diathesis. Moss catalogues the most common diseases with which hemorrhage is or may be associated:

Hemophilia (hereditary and spontaneous).

Hemorrhagic Disease of New Born (several forms).

The Purpuras, acute and chronic (simple, rheumatic, and senile).

Jaundice.

Grave Anaemias and severe infections.

It is generally considered that the coagulation of blood depends upon the action of a fibrin ferment (which is normally formed only after the blood is shed) on the fibrinogen which is in the circulating blood. Concerning its formation, the use to which it is put in the body or its fate, we know little. The fibrin ferment-complex is now usually designated as "thrombin," a term given it by A. Schmidt. Thrombin has been isolated and studied by Howell and others. Howell showed that when thrombin was added to a solution of fibrinogen, that coagulation took place by the formation of fibrin. So it was shown that the substances, fibrinogen and thrombin, together form the essential feature of blood clot. Their mode of action is not known, whether it is a chemical, psycho-chemical, or a ferment. Thrombin only occurs in shed blood. It does not extend to the circulating blood. Hence it seems evident that all the elements which enter into its formation must be present before it is shed. To this the name "prothrombin" or "thrombogen" has been given.

To account for the conversion of prothrombin into thrombin, the presence of a ferment is assumed, which has been called by Morawitz "thrombokinase." It has been found that the presence of calcium is essential to the action of thrombokinase.

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In converting prothrombin into thrombin the exact role played by the calcium salts remains unsettled.

What is the origin of the kinase? There are several theories. It is known that as soon as the blood is shed there is a disintegration of the blood platelets and also of the leucocytes.

Duke in his article on the "Relation of Plates to Hemorrhagic Disease" points out that there is a marked diminution of blood plates in these hemorrhagic conditions, and that when these are supplied by transfusion the bleeding stops for a time, but with a reduction of these elements again hemorrhage will occur. The blood plates have been demonstrated to be the nuclei about which is concerned the formation of fibrin. However, in some cases the coagulation time is normal, but it is generally prolonged, and sometimes decomposition takes place without clot. W. H. Howell (Am. Journ. Phys., xxvii, p. 453, and xix, p. 187) demonstrates that the retardation or suppression of clotting is frequently attributable to the action of an antithrombin which neutralizes thrombin and that only after removal of the antithrombin or the addition of a further amount of thrombin can coagulation be induced. It is also possible especially in cases of cirrhosis that the fibrinogen content of the blood may fall, so that even in the presence of an adequate proportion of thrombin, the clot found is not sufficient (Whipple).

It would seem that in the majority of cases of pathological hemorrhages, thrombin is not liberated in sufficient quantity or rapidly enough to produce the desired clot. Other theories, such as an abnormal thinness of vessel walls, abnormal high blood pressure, a disproportion between the total amount of blood and the total capacity of the vascular system have been advanced; and in hemophilia an obscure explanation as to inherited chemical (fermentation) degeneration of the protoplasm of the formed elements of the blood or the whole organism (Morawitz and Losen), or again the lack of one or more factors normally present, that are concerned in the process of coagulation: as, the lack of fibrinogen, calcium salts, prothrombin, or thrombikinase.

Welch (Trans. College of Phys., Vol. xxxii, 1912, p. 382) believes the underlying condition in these bleeding cases has to do with the endothelial lining of vessels, etc.; that there is a disturbance of balance of the ferments of the cells, due to malnutrition, evidenced by hemorrhage into serous cavities. In bleeding babes he observes there is a marked putrefaction, hypersecretion of mucus, and decomposition in the intestinal tract accompanied by the formation of toxins, which are absorbed and interfere with nutrition of the endothelium, possibly causing cloudy swelling, and thereby upset the normal balance normally attained between the ferments and antiferments of these cells. The toxins or this various condition are equally capable of destroying this equilibrium.

When normal serum from whatever source is added to the blood of any of these cases, it will cause prompt clotting. From this it is reasoned that there is lacking in the blood of some otherwise normal individuals a kinase or activating substance that would normally cause coagulation. It is argued, however, that it is not for this reason that the hemorrhage stops, but for quick nutritional repair of the damage done the endothelial lining of vessels, by action of toxins of bacteria, intestinal, septicemic, etc.

The disease "melena neonatorum" † in many and perhaps all instances is characterized by a relatively sudden disappearance of prothrombin from the blood; the condition usually develops during the first two weeks after birth, and is often fatal; possibly due to lack of formation in the liver of prothrombin.

Bernwald was one of the first to treat a case of hemophilia with serum in 1897. In 1902 Welch reported good results in the treatment of melena neonatorum by the use of normal human serum, probably as much as 300 c.c. He also used small doses over a long period, nine months, as much as 3500 c.c.m., using it for the nutritional value.

Almost every form of serum has been used and from all good results have been reported. Among the sera used are rabbit, horse, antitoxic sera, normal human, citrated blood, pipetted blood, and whole blood (human). The injection of the serum of animals, on account of the difference of species, by reason of the metameric protoid content, is capable of sensitizing (as with other foreign protoids) with the cardinal symptoms of anaphylaxis (serum sickness); the homologous sera do not, and rather tend to be of distinct nutritative value, especially in the malnutrition of infants, who cannot take nourishment by mouth (Welch).

In 1908 Schloss and Cominsky reported good results with use of normal human serum and whole blood subcutaneously in hemorrhage of the new born. Curtis used whole blood in uterine hemorrhage with success and suggests that it should be used with benefit in the anemias, wasting disease infections, and might even prove better than transfusion. It would seem from the foregoing that the method which will supply or stimulate the elements concerned in the clot formation is the one of choice. Transfusion would come first, but it is so surrounded by technical difficulties, difficulty in obtaining a suitable donor; as the blood to be of use and without danger to the patient, must be taken from the group (according to isoagglutinant reaction) to which the patient belongs (Moss), thus avoiding the danger from isoagglutination and isomerolysis. The time delay makes it ineffective. Defibrinated blood and thrombin citrated blood have the same objection. A report of a successful case of purpura treated by H. Wohltram is given in Journal Amer. Med. Assoc., 2163, Dec. 18, '15 (70 c.c. of 2% sodium citrate in 85% Na cl to 100 c.c. of blood and inject).

Normal serum takes time to separate from the whole blood and soon becomes inactive by the formation of metathrombin. H. A. Clowes and F. C. Bush, Int. Med. June 14, 1913, p. 16, advocate acetone pipetted blood. The technical difficulties here again occur. Fresh rabbit's serum seems to

† Whipple. Arch. Int. Med., 1913, p. 636.

be the best of the animal sera, but must be used fresh, as thrombin soon changes into metathrombin on standing for any length of time. It is less toxic than horse serum and does not sensitize so quickly.

It has been demonstrated that the simplest, quickest, and most efficient method is to obtain about 20 c.c.m. of blood from the vein of a healthy person and inject immediately into the gluteal muscles of the patient. Two needles should be used—one can be inserted into the patient, so as to save time. These intramuscular injections are not painful nor do they leave any bad results, but are promptly absorbed. It seems strange that with the results obtained that there have been so few reports; probably on account of the simplicity of the method. I wish here to report six cases, three of which I treated and three in the service of Dr. A. B. Spalding. I will cite Dr. Mohun's case first.

In February, 1915, I saw a baby (in consultation with Dr. C. C. Mohun) with melena neonatorum. It was a high forceps case, delivery not especially difficult. On the fifth day there was a tarry stool; these increased to six to eight a day for sixth, seventh, and eighth day. On the ninth day I saw the patient and suggested the injection of whole human blood into the muscles of the buttock. This I did, taking 10 c.c.m. from the father. On the tenth day there were three tarry stools. After this there were no more and a complete recovery followed.

L. L., age 3, also seen with Dr. Mohun on February 15, '15. The first symptom was the passing of bloody urine. There was no increase of temperature, pulse 90. No pain or frequent urination. Physical examination revealed no cause for the bloody urine. Calcium lactate failed after three weeks of medical treatment. At this time I saw her and gave 10 c.c.m. of the mother's blood. The bleeding ceased almost immediately and she had no further trouble and has had no recurrence of the trouble since.

The next case was a remarkable one from the standpoint of the use of the whole blood, or it was a remarkable coincidence.

Baby C., age $2\frac{1}{2}$. A fine, large girl, always normal, healthy, and happy. Fell from off a chair, striking her side over the right kidney region. She did not complain at the time. But in about three weeks she commenced to pass bloody urine. She had no pain, rise of temperature, or other apparent disturbance. She was given the usual medical treatment for three weeks without the desired results. I saw her at this time. Physical examination did not reveal anything. Wassermann negative. Examination of the urine shows diffuse mixture of red cells; no clots; x-ray negative. She was not anemic. It was decided to try the whole human blood and I gave her 10 c.c.m. of the father's blood into the gluteal muscles. That night the urine showed small clots of blood; then there was a complete cessation of the blood except microscopical cells. We were elated over the result. But the blood again showed on the sixth day after the injection. She was then given an anaesthetic and an examination through the rectum and palpation revealed a tumor mass of the kidney. The following day the kidney was removed by Dr. Barbat, and showed a large sarcoma of the endothelial type, occupying the middle part, leaving both poles free. It was the size of a hen's egg. It extended in a pyramid from the apex at the pelvis of the kidney. The point of this showed blood clot and was the point of the bleeding. We cannot say that the injection caused the clot formation, but it seems that perhaps it did, and that on the fifth or sixth day the clot loosened and the hemorrhage was renewed. The child recovered nicely and has been well since. This was about two months ago.

The next three cases were taken from the clinical records of the obsterrical department through the kindness of Dr. A. B. Spalding:

Baby R. Born February 26, '15. Spontaneous delivery. February 28 passed blood; kept quiet and not nursed. 30 c.c. of mother's blood was allowed to stand and the serum to separate out; then injected subcutaneously. March 1 vomited small amount of blood and 15 c.c.m. of mother's blood serum was injected under skin between shoulders. March 2, stool dark red blood; 5 c.c.m. of whole blood from the father injected into gluteal muscle. March 3, no further hemorrhage. March 10, in good condition, discharged, cured.

Baby L., born March 12, '15. Low forceps. Stool showed high intestinal hemorrhage, tarry. March 27, calcium lactate x.x. Was given 5 c.c. of maternal blood intravenously and 10 c.c. into buttocks, still some blood, but much less jaundiced, but improved. At 5:30 same hemorrhage, given 10 c.c. intramuscularly. June 1, 5 c.c.m. into the muscle. June 3, jaundice gone; gaining weight. June 24, discharged, O. K.

Baby girl, born May 27, '15, spontaneous. May 27: Regurgitating small amount of dark material resembling digested blood. Blood in stools (bladder suspected). Has marked haematoma on right side of head. Given 9 c.c. of mother's blood, intramuscularly. June 1, no further symptoms. June 2, O. K. June 7, O. K. June 8, discharged in perfect condition.

Mr. M., age 36. Had a severe hemorrhage from the bowels. Haemoglobin 50%. Reds 2,500,000. Was given horse serum every three days for four times, also calcium lactate was given regularly. The stools were tarry, the hemoglobin still decreased to 30%, reds 1,500,000. He was then given 20 c.c.m. of whole human blood into the gluteal muscles. The stools cleared immediately and all hemorrhage ceased. He rapidly gained his hemoglobin and red cells and at the end of two weeks his hemoglobin was 90%, reds 4,500,000. Diagnosis: Probable duodenal ulcer.

THE ATTITUDE OF THE PHYSICIAN TOWARD THE VENEREAL PATIENT.*

By ALBERT M. MEADS, M. D., Oakland.

Those of you who have read in the American Magazine of last April, Richard Cabot's article entitled "Better Medicine at Less Cost," will get a great deal of entertainment in looking over the remarks that that paper stimulated those on the other side to pass through the medium of the Medical Press. One letter in particular, published in the Boston Medical Journal for May, will be well worth while reviewing, especially if you enjoy seeing Greek meet Greek.

This author, who has the audacity to reprimand one of his fellow Bostonians, especially Dr. Cabot, has conducted his argument in such a masterly manner that the reader, whether friend or foe to socialized medicine, cannot help but be convinced that there are two sides to the question. Moreover, the faults of the modern dispensary system

* Read before the Alameda County Medical Society September 19, 1916.

are exposed so nakedly before our eyes that we recognize them and know they are true. For instance, the critic takes you back to the crowded waiting room where all nationalities and smells are herded together, he sets you on a hard bench where you wait and wait, he lets the hurried doctor give you a lick and a promise and then conducts you to the little drug counter where you are given something for your bowels. Or, perhaps, he takes you back to one of the long wards where friend and "enema" meet daily, where the wakeful wake the weary, and where someone will learn how to do a lumbar puncture on your spine. And then he turns abruptly on you and asks point blank "how do you like it?"

Now of course we know that the critic has exposed some very unpleasant spots in the modern dispensary system, and has omitted a multitude of good things that the system permits society to do for him who is willing to take a chance, still we recognize many a familiar truth in his sarcasm. Certainly, until there has been a radical change in some of Dr. Cabot's wholesale medical plans, the system of the future will not be popular with the general public who can afford to go, not to a better doctor, but to one with whiskers who charges a fee that hurts.

While following the trail of the Neisser diplococcus across the continent last spring I took particular pains to study the methods in vogue in several genito-urinary clinics, and to quiz the physician in charge as to his attitude towards his venereal patients. In most cases I found that the old "clap" doctor was being replaced by keen young men trained in our best institutions in modern urological technic. They were enthusiastic over functional kidney tests, proud of their cystoscopic skill and eager to demonstrate new surgical methods, but when the venereal patient was mentioned they spoke of him as a necessary adjunct to the teaching clinic, but otherwise a decided nuisance and in the way. In New Orleans the venereal patient visits the clinic on an average of three times, and many come but once. Other clinics, if they looked up their records, I venture to say, could report no better. One urologist told me that he never attempted to cure a venereal case in the dispensary; he simply conducted his clinic so that the students might know what the gonococcus could do under favorable circumstances, and how a chancre differed from a chancroid even on those who give a negative history. This statement seems rather startling, but is it not true? Is not the venereal patient the "goat" for the student to incise, sound, circumcise or cystoscope?

On the benches opposite the sign marked Genito-urinary Department there is hardly room for one more. As you look out upon the silent group you see here and there an old rounder who appears periodically to be straightened out, but most of those who sit and wait are raw recruits, youngsters who have but recently joined the great army, who have been wounded in an early engagement, and who are now seeking the cause of their discharge. Here they are in a receptive mood, fearing the worst but hoping it is not true, each searching for enlightenment and a cure. What are we going to do with them? Shall we follow the plan of most dispensaries, call them in in groups, line them up before the hoppers, let them irrigate themselves and then go home with a prescription and an order to return when the medicine is gone? Can we blame the youngster if he discounts the seriousness of his trouble when we treat him even more hurriedly than we would a "cold in the head"? Yet that is the treatment he is getting in the majority of the public dispensaries, and because of this treatment he goes into the world again with an irresponsible flippant view of his relation to society, and toward the serious infection he carries with him. That is why 80% of gynecological operations are traced to gonorrhea, and that is why syphilis is making itself felt in every walk of life to an alarming extent. If these things are not true, tell me why in New York City the Board of Health can conscientiously recommend only two genito-urinary dispensaries to those who apply at their free advice department for help?

However, the majority of medical men are not working in dispensaries but are busy with one branch or all branches of medicine in a private way in the community in which they live. As far as I have been able to find out, most of them take such venereal cases as see fit to come to their offices. It is a well-known fact that the urologists see very few acute specific cases, not referred by other men, for the general practitioner handles practically all of them.

If the general man is handling the majority of the acute specific cases, most of the responsibility for the future of each case then lies at his door, and the attitude that the patient takes towards his illness is for the most part a reflection of the attitude that the physician has taken toward him. Don't you think that there would be less drug store and other quack treatment of gonorrhea and syphilis if each patient that left a physician's office knew the seriousness of his illness and received more than just a prescription for home treatment?

Now what should our attitude towards this fellow be whose body, like that of the tuberculous or diphtheritic, has become a culture tube for disease-causing organisms? He comes to us infected, not only with the gonococcus or spirochaeta pallida but with a thousand and one false ideas as to the cause and seriousness of his illness, ideas which he has picked from individuals as blind as himself and which after all are the things which make him a menace to the community. Silver salts or mercury may cure the disease, but his false point of view can only be changed by the attitude of the physician toward him and his trouble.

So what should our attitude be? In the first place we should be sufficiently charitably minded to realize that standards of morality differ according to the environment in which the individual has been reared, according to his understanding of sex problems, and finally according to the philosophy of life which he has worked out for himself after hearing and reading the views of other men. So many I find have thought they were not getting

all that life offered until a urethral discharge or a chancre startled them into counting the cost.

We must approach our patient also in an attitude of earnestness. Flippancy on the part of the physician towards sex matters, particularly, breeds not only contempt on the part of the patient for the serious disease which afflicts him, but also breeds crop after crop of newly-infected individuals who follow in the wake of this one uncured case who thinks that a "dose of clap is a sure proof of manhood."

Granted then that we approach our patient in an attitude both charitable and earnest, if we are unconscious of the welfare of the community into which we are to send him in a short time, we have failed in a service greater than all we could render with irrigations and prescriptions. If we quarantine diphtheria and measles, shall we let syphilis and gonorrhea escape without even a line of instruction that might protect some innocent individual from a life of misery and shame? A few clinics issue booklets written in a simple way which the patients are eager to read. Why should not every private physician adopt this method of service to the community, especially when his busy life prevents him from giving sufficient time to his patient to instruct him?

Finally we must catch some of the attitude of the Social Service worker. A few words in a kindly way to a poor fellow who thinks he is a moral wreck will often give him a new point of view from which he can see light ahead. Especially is this so with the boys who knew nothing of venereal diseases before their infection. A word about the single standard of morality and the necessity of a continent life for maximum efficiency often sets them thinking, and after all, if we can get them to think their fight is almost won.

Now let us consider that our patient has been cured, and has come to pay his bill, possibly, and to say good-bye. We have gotten into pretty close touch with him these few weeks we have met around the irrigator, and we know fairly well what he is going to do when he goes back into the world with the assurance that he is well. He may be one who holds up his hand and says "never again," especially if he has had a long, hard siege of it; or, he may be one who says smilingly that he can't be good, but he will be careful. How careful he will be when time has eliminated fear, and a little alcohol has narcotized his self-control, we can only judge by the long line of repeaters who are the real distributing agents between the prostitute and the home.

Under the old system of teaching morals alone 80% of the young men of the country contract gonorrhea before they reach the age of thirty, and 15% develop syphilis. This is a poor showing for any system of teaching. But the statistics do not stop here for these carriers are responsible for 80% of the pelvic surgery in women, and 20% of the blindness among children, to say nothing of the misery and suffering that does not reach the doctor until late in the course of the disease.

If venereal diseases flourish to such an alarming extent under our present system of teaching morals alone, there is something lacking in the system. No other method could give a worse showing and perhaps we could hope to find one that would give better results, especially where the innocent are concerned. We must all admit that the venereal problem, after all, is a public health problem, that regardless of how an infection begins, when it affects the community as a whole, every possible means of protecting that community should be employed. We give prophylaxis an important place in our fight against tuberculosis and other respectable diseases. Why should we not use this means as one of our fighting arms in the battle against so great a public menace as gonorrhea or syphilis?

Prophylaxis is taboo with many well meaning societies who look upon promiscuous sex intercourse from the narrow view as a vice only. From the time of Moses this has been the popular attitude, "let him who plucks the forbidden fruit suffer the consequences." But what a frightful trail of misery and suffering among the innocent contacts the reign of this law has left behind! Prophylaxis, it is true, will eliminate in a measure the fear of infection from the mind of the dissolute, but it will teach him to clean up after his carousal so that he will carry to his home only the contamination of his inner man.

Returning to our patient who has been cured, and comes to say good-bye, let us tell him that a continent life is the only way to obtain absolute insurance against venereal disease, but, if he is going to continue his digressions into the realms of the infected, there is but one thing to do, and that is to properly protect himself before, during, and after contact with the diseased individual whom he has chosen as his companion of a night. He must remember that prophylaxis does not prevent in 100% of cases, but that it does decrease enormously the possibility of his being infected by one or both of the diseases which every prostitute, professional or amateur, carries with her.

So we send him away, this man who has seen fit to come to us for help. We have seen him many times in the six weeks or more than he has been under treatment. We have learned much about his standards of right living. Let us not forget that while we are studying him, he is studying us. His attitude toward the conduct of his life in the future is being bent, or straightened mightily, as he reads us. How important it is, then, that we should be mindful of our attitude towards him! Being charitable, earnest, thoughtful of the public welfare, and conscious of the patients' social needs are going to accomplish more towards the eradication of venereal diseases than all the years of silver and mercury have done in the past.

OBSCURE SYMPTOMS OF RHEUMATISM IN CHILDREN.*

By JOHN ADAMS COLLIVER, A. B., M. D., Los Angeles, Cal.

Rheumatism is an infection, and like pneumonia due to more than one organism. The day may soon arrive when the name will be eliminated or divided up, but its effects and symptoms will remain the same.

So-called rheumatism is not so common in America as in England, and especially London, where it is more prevalent than anywhere in the world. It is said that 8% of all the children in England are affected more or less with it. As a student in Poynton's out-patient clinic I have observed as high as 10%, and he tells me at times the percentage runs over 12. As a special student in Still's ward at the Great Ormund Street Hospital for Children, London, I found the percentage as high as 20. At times it is said to have reached nearly 40%. An analysis of 1000 histories of my own cases shows that 3.2 per cent. of the children exhibit evidence of rheumatism in Southern California.

A Children's Disease. Rheumatism is in reality, strictly a child's disease—the focus starting in childhood and often re-occurring in exacerbation through life. This bombardment is continually aimed at the heart. As a result we have some of our most hopelessly crippled adult heart, with their origin from these insidious childhood infections.

In over 90% of the children with rheumatism, the heart suffers the most. Each attack predisposes to another. The liability to primary heart involvement decreases as age advances, but liability to subsequent attacks with more severe cardiac manifestations increases with advancing age. Our aim is to prevent these disastrous effects and conserve the adult heart by eliminating, if possible, the focus of infection in childhood. This can only be done by beginning early.

Before taking up in detail the obscure manifestations of rheumatism in children it might be well to point out its relation to the adult. Contrary to the general rule, the onset is slow in the child, with few or no symptoms, and little or no temperature. In an adult the onset is usually ushered in by chill, high fever, and general malaise. The disease in the adult is general, being similar to a toxemia, while in the child, the condition is more localized, and a number of foci appear. In adults toxins are apparently manufactured in the blood, while in children, this occurs in the tissues. In the child there is little or no sweating, in marked contrast to the profuse perspiration of the adult. The articular symptoms, as a rule, in childhood are absent, fleeting, or so insignificant as to give rise to no discomfort, while in the adult they are the most prominent symptom, accompanied by redness, swelling, effusion, and pain.

Thus, the most pronounced early manifestations of rheumatism in childhood are obscure in the extreme, if one is expecting to find adult symptoms. They are obscure and difficult, and often impossible to detect, even with the ordinary childhood picture before you. These early symptoms are so slow, so insidious and progressive in character, that even when fairly well developed they neither give the child discomfort nor the parents anxiety, and are discovered, as a rule, only by accident, or when the patient is under observation for some other trouble.

Why, then, so much concerned if the disease causes so little disturbance? It is simply because it is only in this early stage that the slow, progressive character can be blocked before any irreparable damage to the heart is produced. We thereby conserve the adult.

Throat symptoms: A great majority of rheumatic cases have an early history of a series of colds. Much has been written of the rheumatic tonsil, and it is well conceded by the best authorities that it not only bears a close relation of rheumatic infection, but is often the focus of the same; thus, certain tonsils or post-nasal cavities act as portals of infection. Children subject to frequent attacks of tonsillitis or "sore throat" should be regarded as liable to the disease.

Langmead, of London, found tonsils sufficient to warrant operative interference four times as frequently in rheumatic children as in those without such history. It is *not* as a rule the large smooth tonsil, but the *irregular, pitted, imbedded* red and usually small one. Often acute attacks of rheumatism are ushered in by tonsillitis, and show endocarditis without evident articular symptoms.

Growing Pains and Arthritis. Growing pains were long considered a necessary part of a child's development. To-day we know there are normally no such pains. These pains are of such a short duration and character that they are usually easily forgotten. Boys refer to them as "a shooting pain and gone," or "snapping cords" or often only as a stiffness. It is usually worse after exercise and not confined to the joints; in fact, it is usually found in the muscle. As a result these children tire easily. As a rule these pains are more troublesome at night. Parents often remark that the child awakens in the night complaining of pain in the legs, and it is apparently necessary to rub them or apply heat before relieved. It may be manifested only as tender heels, or stiffened hamstrings, or lumbago. This condition is often accompanied by night terrors.

Definite arthritis is not a common symptom in early childhood in the early stage of the disease. "Stiff neck" is another variety of the same thing, and when preceded or accompanied by tonsillitis or sore throat is often an early symptom, and characteristic of rheumatism. An arthritis may assimilate a tubercular joint by remaining for several days in one locality, usually the hip. In infants, the knee joints of scurvy are often mistaken for rheumatism. Possibility of gonorrhoea must not be overlooked. Arthritis may also be exhibited in extreme form of Still's disease with characteristic deformities.

Nodules. Nodules are extremely rare in Amer-

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ica, but in England and especially London they are very common, being found in some hospitals in as great as 50% of the cases. They are located more often over the olecranon processes, and the condyles of the humerus and femur, also the spinous processes of the vertebræ. Sometimes, occipital bone, scapular, crest of ilium or tendon sheath. It is said that they are easier felt than seen, but I have seen them so large in some cases in the London hospitals as to be not only seen but easily photographed. They stand out like grains of corn—almost popcorn—under the skin. They may come and go, but when present are always associated with endocarditis and prognosis bad.

A nodule is so rare in the New York clinics that when one is found the whole staff is notified. I have observed them but twice in California. They occasionally occur with chorea alone.

Cutaneous manifestations. An erythema similar to scarlet fever, first observed by Cheadle, has been noted. I have seen it appear as transient blushes near large joints, remaining a few days and disappearing. In addition to this we have a purpura similar to adults. At times this is almost hæmorrhagic, remaining tender, red, and somewhat œdematous, and disappearing. The presence of styes is also common in these cases.

A new symptom. I have lately observed as an accompaniment of the early stage of the disease crops of small pin-point eruptions. These usually appear on palmar surfaces of the hands or feet, affecting chiefly the toes and tips of the fingers, and appear in crops of from 7 to 15 or 20, covering an area from the size of a dime to a half-dollar. The first objective symptom of this eruption is itching, later white pin-point to pin-head papules appear, which can usually be felt before they are seen. These afterward develop into minute blisters, which finally desquamate. This entire period usually lasts from three to seven days. No writer, as far as I can find, has ever described this pre-desquamation stage, which may be another link in the similarity between rheumatism and scarlet fever. In 1913 I described this same symptom in the Archives of Pediatrics.

Constitutionally and physically, children with early rheumatic infection often look well and take on flesh, but as the disease develops there appears the peculiar pallor or anemia referred to by Holt. It is accompanied by a fall in red and increase in white corpuscles, and a cardiac murmur, possible hemic.

One of the earliest and most constant and obscure symptoms of rheumatism in children is the persistence of a low fever, dropping daily to normal, occasionally below, and seldom going above 100 F. The child apparently feels and looks well, and the condition is ordinarily discovered only accidentally. One naturally thinks of tuberculosis, but gets a negative physical, x-ray, and von Pirquet. This condition was formerly referred to by many observers as the "mysterious temperature." Later it was observed by Poynton, who considered it a very important diagnostic symptom of the early infection. He cites cases which were diagnosed early as tuberculosis. Many of us have had similar experiences. I have never seen the two associated together. There seem to be an antagonism between the bacilli and cocci. During the persistence of this "mysterious temperature" you can daily examine the child, who, under greatest difficulty, is kept in bed, and watch the slow evolution of the disease unraveling symptom after symptom until the heart involvement appears, which will be described later.

Nervous System. The growing unstable nervous system of the child exhibits very early the influence to the toxins of rheumatism. With this there is generally a rheumatic or neurotic family history. Such a child is usually nervous, easily frightened, and extremely irritable, jerking and starting in sleep. I believe many cases of nervous recurring vomiting belong to the same group. These cases are nearly all restless at school, and give the teacher trouble by always moving and squirming. Later the spasmodic contractions of voluntary muscles appear, and often develop into a typical chorea.

Chorea. All authors agree that there is a very close relation between rheumatism and chorea, and many that they are parts of the same thing. Some investigators believe they have demonstrated them as due to the same organism. The work of Mark S. Fraser in analyzing 300 cases of chorea, extending over a period of twenty years, shows that there is either a personal or family history of rheumatism in 90% of the cases. He concluded that possibly all cases of true chorea are rheumatic in origin. Osler says: "There is no disease in which post-mortem endocarditis has been found so frequently as in chorea." Fifty-six per cent. of Holt's cases of chorea were associated with rheumatism, but this includes only the articular variety. The percentage would be very much higher if, as he suggests, endocarditis were included. Still thinks children may have chorea for months, or even a year or so, before other rheumatic manifestations appear. Carey Coombs described chorea due to excitation of cortex, induced by the microorganisms or toxins of rheumatism, and is believed by some to be caused by originating small emboli which lodge in the cerebral cortex.

The early symptoms of this disease may at first be nothing more than lack of coordination, manifested by awkwardness, etc. I have felt that a certain variety of stammering which accompanied this symptom was due to the same thing. I have seen the two go hand in hand, preceding the development of chorea and later rheumatism.

Shock is considered by some as necessary to precipitation of chorea. These cases are usually nervous, and history of fright is easily obtained. The heart at times is disturbed. I have seen cardiac intermittency and extra systoles accompany the severest movements and subside with them. Aubertin and Parvu report a case where the myocardium seemed to participate in the choreic movements.

The voice sound in chorea first described by Swift is also an important manifestation. It de-

pends upon pitch and intensity of sounding of "a."

Irritability. One of the earliest manifestations of rheumatism of the nervous system of a child is exhibited in irritability. My attention has several times been called to children in whom this symptom was the only one noticeable. Parents have brought children to me because they took spells of being mean—crying without apparent cause, throwing toys, making faces, saucing mother, etc. In making examinations I have discovered evidence of rheumatism, and the irritability cleared up with rest and anti-rheumatics.

I believe all cases exhibiting an unaccountable, irritable temper, etc., should be thoroughly examined. W. P. Branson mentions a nervous irritability due to the poison on the specifically predisposed central nervous system, which may precede the appearance of choreic movements by some weeks. I wish to emphasize this point, as I believe irritability one of the earliest manifestations of rheumatism in children.

Carditis. The most important feature of rheumatism in children is the relation it bears to the heart, which is involved inversely in proportion to arthritis; that is, the less arthritis the more carditis. All of its manifestations are important because of their bearing on this organ. The heart involvement is a part of the disease, and not a complication. It may attack the endocardium, myocardium, or pericardium, or all of these. The latter is usually a late symptom, and will not be considered here.

Endocarditis. The most obscure symptom of rheumatism is endocarditis. It is present in 90% of the cases in childhood. In the beginning it is absolutely impossible to detect. We can only infer its presence by close observation, wait, and afterward watch its development. One can easily appreciate this when he considers that the first effect of the toxin or microorganism is to produce endothelial degeneration of the valves, resulting in formation of very small nodules. It is impossible to detect the presence of these at first with the stethoscope, and many cases go to post-mortem before being discovered. The first reliable symptom, however, of their presence is a change in heart rate or rhythm. It may be rapid and irregular in the beginning. The earliest sign I have observed has been an intermittency, which increases later into irregularity, followed soon by roughening of the first sound. A double mitral murmur is, according to Poynton, the only reliable symptom of endocarditis.

Herz, of Vienna, reported an epidemic of endócarditis, with moderate fever, and without angina or joint symptoms.

Myocarditis. The toxin, one product of which is said to be formic acid, has a very marked relaxing effect upon the cardiac muscle. This interferes with the working capacity, and leads to loss of tone, which results in dilation of the chambers. The sphincters around the mitral and tricuspid valves may likewise be affected, causing their relaxation and thus allowing regurgitation. Authorities differ as to which symptoms appear first —endocarditis or myocarditis. This much is agreed: the earliest manifestations of each are the same, being, as mentioned before, first a change in cardiac rhythm, soon to be followed by change in the sounds.

Accompanying this we have signs of dilation; namely, increased cardiac dullness, with displacement of the apex beat. The first sound is short and blurred, with or without definite murmur, with usually an accentuated pulmonic at the base. Occasionally there is pain, but when present this is frequently referred to the epigastrium. This dilation is functional, and with proper rest and attention will disappear.

It is impossible to make an early diagnosis by signs of the heart alone. There are other infections which may produce a carditis and simulate the symptoms mentioned. It is impossible to diagnose in this stage by any one symptom or a single examination. The progressive character and "course of events" must be considered. Even when well established, it is more often overlooked than wrongly diagnosed.

Remember, rheumatism in children is the most insidious, most deceptive, most easily overlooked, most difficult to manage, and most disastrous to the heart.

Also remember, the fatuous policy of "watching, waiting, and hoping" in these cases may result in the sad cardiac state of absolute and permanent unpreparedness for future adult emergency action.

THE TREATMENT OF FRACTURES OF LONG BONES.*

By S. J. HUNKIN, M. D., San Francisco.

The treatment of fractured bones is at this time perhaps the most interesting and certainly the most important practical problem of the surgical art confronting us. From a financial and business standpoint it is doubtless the most serious of all the ills the members of our profession are called upon to handle. It is wise, therefore, that our thoughts should be clear upon the essential points, and our ideas formulated on the details of treatment, along the lines of safe and definite practise.

The treatment of fractures is at this time the most dangerous part of our art, not dangerous alone to the victim of the fracture, but more especially dangerous to the safety, the reputation, and the financial security of the doctor. I am assured by the secretary of our State Society that at least 50% of all the suits filed in our courts, which bring the skill and reputation of doctors in question, are on the subject of the treatment of fractures, and also that this percentage is increasing rather than decreasing. That a great deal too much is expected of the doctor in this part of our domain is very evident. Not alone is he held responsible for the placing and keeping the fractured parts together, but he is also expected to control the processes of repair, compel union, and force the return of function. Speaking horticulturally, he is expected not only to plant in proper position and locality, but also to secure favorable soil in any locality; to control frosts, rain and

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sunshine; to carry the crop along over every vicissitude; mature the fruit, and then sell it at a first class price, no matter how remote the market may be. This is about the control which the layman apparently expects of the doctor when he is called upon to treat a fracture and the results he expects him to get, even when the patient jumps the control as soon as the doctor's back is turned—and this last by the by, not infrequently happens. It is bragged over when all turns out well, and absolutely denied when the reverse occurs. Time was when all that was expected of the doctor was that the victims of the broken bone should eventually recover with a useful limb, but that is now only a minor part of what is demanded. The victim now generally looks at his insides from the standpoint of their seeming appearance in a radiograph, and if his friends or his lawyer, his butcher or his baker, can detect in these pictures that purport to represent (and do not) the exact condition and position of the skeletal structures; if, as is said, there can apparently be determined any change, yea in one jot or tittle from what is considered the normal, the trouble begins. The victim (who by the way may have a good functionating limb), seeing his insides before his eyes, is aghast at the evidence of his seeming fragility, and may, and often does, refuse to use the limb at all, or only when sustained and aided by crutches, or some other support. He is prone to get softening of his will and bad alignment of his ambition, and desire to work, as a means of support. He now blames the doctor, who knowing the difficulties encountered had perhaps congratulated himself on having secured so good a position as he had. Many of such patients are honestly scared after examining the X-ray pictures, and are convinced of their incapacity. Many, however, are simply, or may be, viciously affected with mental unciniariasis and find in these wonderful pictures, a God-sent means of getting at the goat as well as the cash of the man who had devoted so much time, care and skill to them at a time when they were sore with pain and craving comfort and relief.

I shall speak first of the general treatment of fractures, and later will in a limited degree deal with some special fractures. It is understood that I am speaking particularly of the methods evolving from my own experience and have no intention of giving you an exhaustive report of the various authorities and the many plans offered by them. In the discussion (in order) to confine ourselves, certain principles must be accepted:

1st. That the ideal plan of treatment necessitates the reposition of the fragments as near as possible end to end, in accurate alignment; as well as the maintenance of this position, over a sufficient period of time for efficient repair to take place, or if not complete at least for repair to such a degree that function can be safely resumed. This is *absolute* so far as I am concerned and although circumstances may not always favor its consummation, and may even prevent its accomplishment, yet it is the ideal devoutly to be wished and earnestly to be striven for. It is only voluntarily departed from when conditions prevent its being approximately carried out.

2nd. The injured part is to be kept quiet, with its particular function in abeyance as long as that function cannot be performed without producing pain, spasm, or excessive oedema. Conversely, as a general rule, work is permitted and even insisted upon, when its performance does not develop pain, spasm, or excessive oedema. It is therefore apparent that the period of confinement, if any, varies with the bones involved, with the age of the patient, the condition of the heart and kidneys, the general make-up and habit of the patient, and may even be determined to a lesser degree by his personal peculiarities and idiosyncracies.

3rd. Immobilizing a joint does not favor anchylosis in that joint—conversely, monkeying with a joint, when it or its neighborhood is injured, has its resistance lowered, is under strain and spasm, is in need of rest and quiet, adds insult to injury and does not favor its eventual mobility. Passive motion *so-called,* or at least as it is generally known and practised, *is bad, absolutely and incontestibly bad.* The only possible exceptions to this rule that I am aware of, and these are only apparent exceptions, are:

First: In elderly people with a previously existent osteo-arthritis, especially in wrist fractures; where the possibility of a stiff joint is quite imminent whether passive motion is made or not. In such cases passive motion is perhaps neither good nor bad, neither helps nor retards anchylosis, but may possibly help the play of the tendons.

Second: Another apparent exception is in the knee in femoral fractures. The lessened motion here, however, is not due to changes in the joint in our experience, but rather to the binding of the muscles, especially the quadriceps, in the callus over and around the fracture and, of course, the immobilization of the joint, plays no part in the loss of motion. As a matter of fact, under such circumstances, mobility during repair favors the production of callus and consequently the greater union of muscle and tendon with that callus. It is not intended to be understood from the foregoing that we never move a joint which has been *injured directly,* or which may require immobilization, from its proximity to an injured or fractured bone. As a matter of fact we do move such joints whenever the fracture is dressed, or redressed. We move the joint gently and easily without giving pain or distress, rather trying to aid in the comfort by getting the joint into an easy, or more easy, position. The argument we make is that we move the joint to give the patient comfort and relieve tension, rather than to force the motion of the joint in an attempt to prevent anchylosis.

While I am on this subject I would say that at times, after proper repair has apparently taken place, the radiographs showing the structures, the fractured bones, etc., to be in a satisfactory condition, the patient persists in holding the joint rigid, seemingly paralyzed by fear of its motion. (This usually happens in strong adults, apparently never in children). He may appear to try to move the joint, struggle, in fact, during the attempt; and yet you note no response in the joint or in the

muscles around it. In such a case, after waiting a few days for this inhibition to pass, and no change occurring, I am in the habit of suddenly moving such joint to the limit. The patient learns at once by this demonstration that the joint will move, and the stiffness is soon gone.

Regarding the work and methods of Lucas-Championerre and Bardenhauer, the two men whose somewhat peculiar methods have caused the most discussion, and by reason thereof must be considered, I would answer that having observed the details and the result obtained where the methods sprouted, I am much more impressed with the results after Bardenhauer's plan than after Lucas-Championerre's. The end results of the latter in my opinion have not been up to the standard expected in this state. The end results of the former, while being all that could be expected, could hardly be carried out in any considerable number of patients, except with the help of a trained and brilliant corps of assistants in a stable and efficient hospital. It is therefore commended for Bardenhauer and his pupils in their own hospitals, and in the treatment of patients whose earliest lessons were obedience to those in authority over them. While we have no argument with these and many other methods when practised by their various originators, yet I deprecate their general adaptability and safety, and urge upon you the careful use of the method, the essential features of which are as has been described—First: The placing of the fractured bones end to end, in proper alignment—Second: The fixation of the fragments in this position over a sufficient period of time for reliable union to take place and—Third: During the whole period, function of the part, within the easily determined limits of pain and spasm.

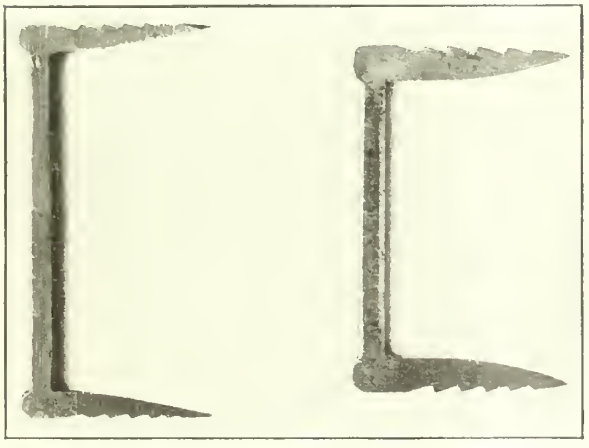
It is argued in favor of methods which do not require fixation as an essential feature that the period of loss of, or retarded, function is greatly lessened. Statistics to bear out this claim are freely offered, but for many reasons mentioned in this paper they are not of value, the period of time for return of function being so variable. To my mind, it is better to be sure first of your proper length of limb, and then of its stability, than to argue over a week or so of greater or lesser time spent in the return of sufficient function for beginning use. If you have secured firm union and normal length in anatomical position, the other things will soon follow. As a matter of fact, when the patient has enjoyed from the beginning, function of the limb within the limits of pain and spasm, no particular atrophy has taken place, the muscles are soon ready to resume work, and full function is not ordinarily long delayed. I am strongly of the opinion that if the time lost in the cases of delayed and non-union consequent upon non- or insufficient splinting, was added to their claimed early functionating cases, that the average period of recovery would be far greater, than if an excessive period of splinting were the rule. However, we are not advocating too long splinting, but only splinting long enough. I may add, however, of the two evils I would prefer fixation over a somewhat too long period than over a somewhat too short.

How long shall fixation be maintained? This, of course, varies with the different bones, with the dyscrasiæ and diseases of the patient, with the character of the breaks and their multiplicity, with infections in the fracture, and even infections in situations remote from the fracture in question, and to a lesser degree with the personal make-up of the victim. I have omitted adding that it varies with the age of the patient, for I am in some considerable doubt on this point. All great authorities, however, assert it. Apparently the statement has been handed down without question from the father of medicine, but up to this present my experience suggests the statement is probably not true and surely it is not proven. Certain I am that age plays not nearly so important a part as is generally supposed. Fractures in old people (even in the neck of the femur in a woman 89 years) unite so far as I am aware in practically the same time as in younger people. The period it takes to get firm union in young healthy adults ordinarily varies to a somewhat considerable extent. I am rather of the opinion that union is a little slower after direct bone-splinting than when outside splinting is alone practised. Generally speaking, the time mentioned by recognized authorities is not long enough for safe union, for some fractures, especially for those of the shaft of the femur, is not nearly long enough. Many of the cases, thought to be instances of delayed or non-union, is the result of not taking this fact properly into consideration. Better to splint too long than not long enough. Wait a little longer is good advice to give and insist upon when the patient begins to talk and argue about being ridden of the splint. Don't examine the fracture too often when you are assured the position is satisfactory. Meddlesome surgery in the treatment of fractures is bad. Let things alone if they are safe.

What do you mean by splinting? is a question often asked us. Broadly speaking, a splint is something applied to a part which gives and maintains immobility in that part and has no reference to the material, nor how applied nor where, whether to the parts over the soft structures or to the bones direct. Speaking now of outside splinting only, a splint may be made of wood, paper, iron, leather, plaster of paris or what not, it makes no difference so long as it splints; that is, that it secures immobility by lateral support. Personally it practically always means with us, a plaster of paris splint arranged in some manner for convenience, modeled to the patient while plastic and allowed to harden while under the control of the eye and hand. Ready made, patented, adaptable and adjustable splints are mentioned only to be absolutely and unqualifiedly condemned, when material for a modeled splint can be secured. They are to be classed with Wine of Cardui and others of that ilk, with this peculiar difference that after the one the undertaker may cover the error, and in the other the X-ray will almost surely resurrect it. Other material may be used to reinforce, or to aid and assist here and there, but plaster of paris fills

practically every emergency (on the outside) whether for the jaw, the femur, for the clavicle or the wrist. For *inside* splinting we use other materials, but that is another matter which will be later discussed.

Securing end to end position and proper alignment: for it is ahead of the game to plan how to hold the desired position, before the means of attaining that position has been considered. Speaking for the time, of simple fractures, with no excessive comminution; shall we attempt to reduce it in the dark, or with a keen eye open to the difficulties and with a plan devised to overcome the problem presented. Always with an open eye single to the purpose; fully alive to what is to be attempted whether an incision is made or whether the skin is maintained intact. Three attempts should be made to get the coveted position; if the first and second fail; and be checked up by radiographs, before the question of making an incision is at all open unless in such instances where a large experience at once decides the probabilities.



Staples of design used for ten years.

In order to maintain the essential and desired visual picture during the necessary manipulation, the following plan is advised: Secure two radiographs, taken in the following definite manner. Focus as near as possible over the supposed side of fracture, first on a horizontal, and then again on a transverse plane. Before exposure, there must be no question of the following points. First: That there is no torsion of the fragments, especially of the distal fragments. Second: That one or more anatomical landmarks (and if possible measurements) are definitely established in some manner that will show on the photographic plate. With these precautions an average good picture is sufficient. As good as you can, of course, but center your attention rather on defining the anatomical position correctly, than on a peculiarly good picture. Now determine and write in big lettering some such formula as this: "Patella perpendicular —malleoli level—lower fragment to come down 2 c.m. full—displace to tibial side 1.5 c.m.; and forwards 1.8 c.m.—change alignment 15° towards the fibular side." Pin this formula to the window. (If your experience is great you can sometimes use the radiographs as a guide, but the formula written at your leisure is far better and safer.) Now have a plumbline fixed with a finger over some anatomical landmark more or less distant from the fracture, but on the same line, extend it over the extremity and have the distal end, controlled (out of your way) by a dependable person, in line with your proximal fragment, and over the position where you intend the distal fragment to go. Your assistant now controls the proximal fragment while you make the desired reduction—splint the limb in this position (a mechanical holder at this time is of the greatest assistance). Test with other pictures the next day if plaster is used and at once if other material is used and the patient is willing. No anesthesia is given if the confidence of the patient can be obtained. Anesthesia is not given in the large majority of cases. The end to end position need not to be absolutely exact. It is fairly satisfactory if the center of one fragment is within the periphery of the other. Better than this is desirable, but, especially where bones lie parallel as in the forearm and both are fractured this is often as good as can reasonably and safely be secured without direct observation and fixation; undue, strenuous, or over-prolonged manipulation not being wise. Of course, torsion must always be eliminated and alignment made fairly good. With the latter two points secured it is wise to be content with end to end position after the necessary safe and careful attempts have been made, even when the ends are not exactly true. There is a providence that will smooth those ends, uneven as they may appear in the pictures. It is true there are some especial fractures, even simple fractures, where experience has taught that such rules for reduction may be safely disregarded and others where they are not sufficient to enable one to secure proper and reliable replacement, but this general plan with modifications here and there gives much more definite control than the usual blind attempt and is what we follow and strongly advise.

It is not necessary for me to discuss with you, gentlemen, the danger of tight bandaging or splinting; and of the Volkman paralysis, which has so often followed such bandaging, especially in the arm; nor to the significance of rapid swelling and the possibility of hemorrhage; to the necessity of knowing whether sensation is normal or abnormal before treatment is begun, as well as to the desirability of recording what is found regarding this matter. I have before spoken of the necessity of getting radiographs in at least two dimensions. This point I would like again to particularly emphasize, for as you are aware, repeated court rulings insist upon its necessity, and recently our State Society has decided that its members will not be protected by the Society in a damage suit, unless these radiographs are made and kept on file.

Shall fractures be put up at once in permanent dressings, or be put into a temporary dressing for a few days, before a permanent dressing is attempted? There are very many answers to this

question. It is my practise to put up every fracture, when the condition of the skin will permit, at once in a permanent dressing. This is sometimes delayed for a day or so when blebs are numerous and hemorrhagic, or of large size, and where we think they require some special attention, but generally speaking, with us, fractures are put up promptly in as accurate a position as is possible. We have never had any occasion to regret this method. We make, of course, very earnest attempts, that the pressure shall be equalized, making it a little tighter where the swelling is extreme, and a little less tight where the swelling is not so great, trying to get the distribution of the pressure within the splint equal. The reason we vary the pressure is because the fractures as they usually come have been already dressed for a few hours, or even for a few days, and the pressure not having been evenly applied the œdema is not equal. So we make the attempt to equalize this irregular swelling by well directed pressure. Every precaution is taken that there shall be no tight bandaging and that the pressure shall be as I have earlier stated, equal throughout. We pad splints and pad bandaging over fractures with cotton wadding; sheet wadding, not absorbent cotton; put on smoothly and evenly, not very many layers, three or four layers at the most, but a little more where we are making pressure a little greater. It is usually taught, however, that it is wiser to put fractures up temporarily for a few days, in a fracture box, or with sandbags, or with cardboard or strips of wood loosely, with no attempt at position before a permanent dressing and setting so called can be considered. I have no argument with the men who put fractures up that way, but we do not so treat them. We look upon such practise as favoring the development of blebs, hemorrhage, oedema; as wasting time, giving the patient much more pain than is coming to him, increasing the necessity of special nursing and the period of probable disability, with no increased advantage. We make the first dressing in some seventeen to twenty-four or five days, depending upon the bone fractured, the shorter period of time in the smaller bones and the longer period of time in the larger bones. We have, before this dressing, again secured radiographs, and if the alignment is not satisfactory we make the necessary plan and now make an attempt to secure a better alignment. After this dressing, we rarely change again until the expected period for union to take place has been completed. From time to time now, however, we move the part more or less strenuously in the splint, to find out if any muscular spasm is engendered thereby, and when this manœuvre can be done without any pain or spasm, we allow the patient to use the limb, gradually increasing the amount of weight borne and the work done; checking it up, however, if any particular pain or spasm is produced. In this test we disregard a slight aching, which goes away after a few minutes' rest. When the weight is borne fully and evenly without any distress or pain or spasm, we remove the splint, making the patient feel secure with a flannel bandage over the part which had been before protected by the splint, until the patient is able to balance himself and use the part freely.

When there has been any question of bad alignment during the aforementioned dressing, we take a picture through the splint after it is dry, and if alignment is still not satisfactory, we make an attempt to change it within the splint, by bisecting and moving one fragment of the splint upon the other. From the foregoing it must be of course understood that there is no compromise and there is never any wait unless end to end position is secured. That is the first essential and its surety must be absolutely and at once determined; but we may wait if the end to end position is satisfactory, until the first dressing, to change a little malalignment. As a matter of fact, this is the chosen period because we have found the slight correction of alignment can be more readily and safely done at that time. There is now enough union to hold the end to end position while the movement is carefully made, yet not enough to interfere with the easy correction of the malalignment. A part of the foregoing remarks regarding the amount of work done, is spoken of as though the fracture was in the leg; that is, we speak of carrying weight, etc. Of course in the arm, where weight carrying is not ordinarily a part of the function, we try to promote function in other ways. We give the patient, beginning in fourteen to seventeen days, a tight rubber gas ball, or a section of an ax handle, and urge the patient to keep up a more or less continual squeezing, handling and playing with these bodies; the patient carrying one of these objects or both, as seems necessary in the pocket, and maintains as above said, a continual handling of them.

Speaking for the moment of the treatment of some common fractures where experience has taught us the possible advantage of departing from the general rule. First, in Colles fractures. We believe that such fractures cannot be pulled in place by any safe tractive force. They must be manipulated into the end to end position and then levered into place; traction, within the limits of safety, having apparently no particular effect upon the position of the fragments. An attempt should be made to reproduce the position which existed at the instant the fracture occurred, trying to get end to end position by manipulation and then aligning with a leverage motion. The usual way of pulling them into place avails nothing. The same statement is true regarding Pott's fractures; they also must be manipulated and levered into place, then splinted in as near a right angle as can be readily obtained with the mid portion of the tarsus adducted. It is usually taught that this fracture must be put up with the foot at a right angle and in adduction. This position and movement, however, is practically impossible to accomplish by the majority of people. If you will try your own foot, with the knee extended, you will find that it is hard and possibly impracticable to bring the foot into a right angle

position, when it is at the same time in adduction. This movement was probably readily accomplished and the advice true when it was first written, in the days of Hippocrates in a period when people wore sandals; and apparently this statement has been perpetuated in every work on surgery from that time. Right angle position, however, is easy in pronation and here lies the danger, for often in getting a right angle position adduction is lost at the mid tarsal where necessary and secured in the forefoot where of no value. In sandal-wearing people (I find this is true in the Japanese) a right angle position of the foot in adduction is probably easy to obtain, but in shoe-wearing people such a position in the majority of cases is impossible to secure without undue and unsafe strain. Also I would note here that the adduction of the foot as generally practised is adduction and torsion of the forefoot only, which does not correct or prevent deformity of the various units around the ankle joint. The deformity here, i. e., around the ankle, remains in spite of the fact that the forefoot is adducted and rotated. It is necessary, therefore, in order to get the parts in position, to make adduction of the mid and posterior portions of the tarsus.

When the fractured parts cannot be put in proper apposition and alignment from the outside, that is by manipulation without direct observation, when three or more attempts have been made carefully controlled without satisfactory results, and when conditions are such that the open treatment can be practised safely, then and then only the proper replacement should be secured, and splinting made from the inside; that is, through a wound made for the purpose, and here I may say that in my opinion many fractures cannot be approximated from the outside by any safe and sane procedure, and many others cannot be held in position by splinting over the soft parts even if they could be approximated. Ofttimes I have been amazed to find the amount of well directed force with a strong lever which was necessary in order to lift the fractured bones into proper apposition when it was applied positively and mechanically under full control of the eye and hand. It goes without saying that no man should open a fracture if he could treat it satisfactorily unopened. No man should subject a patient to the risk, no matter how small, when that risk can be avoided. Again, no man should open a fracture, changing it from a simple fracture to a compound, unless every facility is at his command. Here let me call your attention to the fact that the conditions which are deemed amply sufficient for safety in an abdominal operation do not begin to be sufficient for the opening of a fractured bone or joint. It is surely true that the peritoneum will suffer more traumatism, tolerate more injury and take care of more bacteria than will an injured bone or joint without infection. Infections also are much more serious, and are much more to be dreaded in bones than in the abdominal cavity. I wish especially to emphasize this point, therefore make no mistake if you are intending to open and splint a fracture from the inside owing to the rigidity of the asepsis. Do not run away with the idea that because you are a good abdominal surgeon, that operations upon fractures under a similar technic are safely attempted. When, however, the indications are clear, when satisfactory reposition cannot be made and maintained through the soft structures; when the decision is carefully arrived at and you feel it necessary to convert the simple fracture into a compound fracture after, as earlier said, the proper attempts have been made to avoid it, then don't make the mistake of thinking you limit the chances of infection by trying to accomplish your purpose through a small opening. Make your incision wide—get a free, accessible opening to the fracture and peel off the periosteum, and with the aid of strong levers or forceps, get your end to end location. Generally speaking, in early cases, with little difficulty you can get even the little projections of the fractured ends into the little notches from whence they came. More difficulty is experienced when the fracture is older and the contour of the ends have altered, but this also can be accomplished with a little skill and patience. Handle the tissues as little as possible, not at all if it can be avoided. Keep your fingers out of the wound as a cardinal principle whenever it can be avoided. Lever the fragments into position with instruments, and secure the proper rotation by a strong grasp with holding forceps, aided perhaps by a third party, guiding the distal fragment, through the extremity. Do not try to pull the fragments into position. Lever and rotate them into place. This procedure is easier, safer, and you see better what is happening. When you get the desired position, security is obtained by some metallic splint or binding. Generally speaking, a plate and screws are the most desirable, although now and then wire subserves the purpose better, and often a staple is better than either, especially when the fracture is in close proximity to a joint and there is not enough space to use a plate without encroaching unwisely on the articular surface. In some situations also a nail is better than anything. The material and the particular shape and feature of the material is preferred which goes into place easier, and is the most dependable in the position desired and under the circumstances which exist. The staple offered in the shops, however, is not satisfactory for the purpose, but we use a staple which can be depended upon if its peculiar properties are understood. You will notice that it differs from all other staples in the following points: Its perpendiculars are slightly wider at the points than at the base. The points are sharp, beveled on the inner surface and on the sides, but not on the outer surface. It is not serrated nor grooved, but *barbed*, and that only on one surface, the outer surface. The *barbs* are arranged in such a manner as not to interfere with the driving of the staple forwards but rather rebelliously oppose its withdrawal until at least there has been some absorption and bone-softening around it. They bear as you see small nipples on

the perpendiculars to facilitate easy driving. Of course a hole somewhat smaller than the shaft diameter must be drilled for their reception, must be drilled rather accurately. When driven the points tend to spread a little and as they penetrate under the repeated blows the fractured ends can be seen to closely approximate, until often the line is hard to find. In locations where there is only one bone, as in the thigh or upper arm, it is often advisable to use either two plates or a plate and a staple. In this way you secure immobility in all dimensions. When two splints are used in this way, they are better placed at 90° from each other than at 180°. These plates or staples or what not are placed under—not over the periosteum. See and be particular where you are putting the metal splints so that they do not needlessly encroach upon a joint or compress a nerve or lie so close that a vessel is later eroded. I am constrained to urge this upon you, because within the last few months, I was shown a picture of a plated humerus, and was pleased to compliment the surgeon who had applied it for the alignment and position secured. Later the splint was taken off, and the man had entire paralysis—musculo spiral paralysis. The man then was sent to the city and came into my hands. When the wound was opened the plate was found closely applied to the humerus outside the periosteum, and upon its removal it was found that it had been placed over the musculo spiral groove compressing the nerve. The paralysis in this case is slowly disappearing and no permanent grave injury has apparently resulted, but at least it has interfered with the man's recovery over many months; has been a needless source of worry and expense and might have been a very grave matter. Therefore it is wiser to put your sutures, your wire, your plate or what not under the periosteum. It is much easier in this way to replace your fragments without strain, and to consequently simply fasten your plate, etc., accurately after the periosteum has been lifted. Then sew your periosteum over the bone, plate and all as closely as you can. Generally speaking, in my experience this cannot be done accurately, for in the many days which have usually elapsed since the fracture occurred (from the effusion, the œdema, etc.), that after the replacement has been effected the structures are so stiff and so shortened, the periosteum is so tense that it cannot be made to fully cover the bone, but we cover it as well as we can. It is then wise to tack the muscles together very loosely and the fascia still more loosely or not at all, unless the muscles appear to extrude overmuch, when enough loose suturing of the fascia is made to contain them. The skin generally is closed tightly, but rarely, for some particular reason, a silk worm gut drain may be put in for two or three days. We prefer, instead of the drain, to leave the muscles and fascia partly open in the manner described so that the seepage may have free exit to the subcutaneous or areolar tissue, where the organism safely takes care of it.

Open and infected fractures. When a fracture is compounded and the infection is slight, we put on a splint and wait a few days until the necessary antibodies have been generated, the infection has petered out, or has been walled in; which it generally tends to do, if it is not unduly meddled with. Then the fracture is treated as a simple fracture except that the wound is not closed. When, however, the wound is virulently infected, and this infection continues with sloughing, we attempt to lever the bones gently into an approximately good position and fix them there as simply as possible, and then with patience wait with the wound extended wide. In multiple fractures, however, even when in the same limb, often in the same bone, with one fracture infected and the others clean, if sloughing is not present, we wall off the infected area and operate upon the other or others in confidence that its repairs may not be hindered by the necessity of delay for the compound or infected fracture. If, however, sloughing is present to any considerable extent, I do not consider it wise to operate in other simple fractures except in great necessity, for I have several times observed simple fractures become infected under these circumstances in other locations when the overlying skin had not been broken by intent or accident. When there are two parallel bones fractured, as in the forearm or in the leg, and one is compounded, we operate upon the one that is simple, after waiting the required few days, to give the infected side a chance to recover and initiate repairs; seal it up and then use the repaired bone as a fulcrum with which to swing the fragments of the infected fracture into position, thus practically avoiding direct interference with the infected area, treating the infected side, of course, through the splint as an open wound. Infected fractures in joints are treated in the same way. If, however, the infection is extreme and septic, and does not appear to be making any progress towards repair, and at the same time it seems impossible, owing to location, wounds, etc., to hold it in any fair position without direct invasion of the septic area (and in these cases generally there is a large open wound), we do not then hesitate to enlarge the wound, lever or pull the bones into place and link them together with a staple, not trying now to get accurate reposition, but simply to maintain the proper length and somewhere near good alignment until the septic process comes to a close. We hold this position months if it is necessary until the infected tissues have sloughed out and the wound is comparatively clean, then carry out the procedure as detailed for ordinary compound fractures.

Fractures in joints. If the fracture is simple and not comminuted it is handled as any other simple fracture, but when the segment is in numerous pieces, we open the joint widely and with the finger, or with the eye, or both, place these fragments accurately in position and fasten them together with wire or with a staple or both. Then we repair the main break, fastening that

as circumstances may determine. We deem it unwise in any fracture to remove fragments even when entirely separated, leaving every piece of bone in as nearly as possible its original position so as to favor callus formation and firm repair. It appears ridiculous to us to take out a piece of freshly fractured bone from the locality from which it was fractured in one case and transplant a piece of bone from a normal tibia or rib to a similar locality in another case. There is no bone graft, of course, that would so readily unite and would so surely subserve its purpose as the piece which has been recently rent from its bed at the fracture site. I find the removal of these fragments being done continually, the sliver of bone which was accidentally ripped or splintered at the time of the fracture being removed in the hope that providence will in its goodness "make the hiatus good," and later if repair does not take place properly an operation is suggested in order that a corresponding fragment can be taken from the tibia and used to repair the break, thus putting back a poor substitute for what was earlier unwisely taken away. We have a case at the present time with non-union of the ulna, the attending doctor having recounted to me with satisfaction, that he had removed a large sliver of bone which prevented the "setting" satisfactorily and that his wound has healed without any infection. He secured healing of his wound all right but non-union of the bone, and it apparently has not yet occurred to him that the piece of bone which he so carefully and unnecessarily removed bore away with it the chance of proper repair and and satisfactory union. Nature is often apparently lavish in her heaping together callus at the point of fracture—appears exuberant many times in her production of new bone, but until we better understand her processes and reasons in the particular instance it appears unwise to remove any of the material at hand which she may find expedient and desirable. Mother nature often works wonders in her processes of repair, but it seems to me it is the part of wisdom that helps her in her processes, than to test out as it were how much she can accomplish under difficulties unaided.

A TRIAL OF GOODMAN'S "AUTOSERUM" TREATMENT OF CHOREA.*

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The treatment of chorea minor devised by Goodman [1] and carried out by him in a series of thirty cases, has shown results so uniform and strikingly favorable that it appears to deserve further trial. If the claims of Goodman are confirmed we shall have a rapid and effective means of controlling the principal symptoms of a disease which, until now, has yielded slowly and uncertainly to treatment.

The method consists in the injection, one to four times repeated, of the patient's own serum into the subdural space of the spinal canal. Improvement, shown by the disappearance of choreic movements, occurs frequently within three days, or even less, and a majority of cases remain permanently free of movements. Certain instances of recurrence are mild and readily amenable to the action of another injection.

Some of Goodman's conclusions may here be quoted:

"Of the thirty cases treated, 14 received one injection, 8 received 2 injections, 5 received three injections, and 3 received four injections.

"Of those receiving one injection, 12 were cured and 2 markedly improved.

"Of those receiving two injections, 5 were cured and 3 markedly improved.

"Of those receiving three injections, 2 were cured and 1 markedly improved, 1 slightly improved, and 1 unimproved.

"Of those receiving four injections, 1 was cured, 1 markedly improved and 1 unimproved.

"To explain our interpretation of results, cured means absolute cessation of all twitching within a week. Markedly improved, a cessation of all twitchings within two weeks. Slightly improved, when the twitching disappears at the end of the third week, and unimproved, if the twitchings are present during the fourth week. Two of the cases are relapses. One occured after nine months, and the other after eleven months."

An obvious objection to Goodman's designations is that if twitchings actually cease, even after three weeks, the case may be regarded as cured. The results as reported by Goodman are therefore expressed with a maximum of conservatism. Only 2, or 6.7%, of the cases still showed twitchings at the end of three weeks—a truly remarkable result.

In the discussion of this paper at the Academy of Medicine in New York,[2] S. Feldstein reported the cure of a very violent case of chorea with two injections, and Moffett, who had observed the treatment with Goodman at the German Hospital, stated that "it worked wonderfully" and advised the use of 15 c.c. of serum instead of the customary 10 c.c. in order to avoid the necessity of a second injection.

At the time Goodman's paper appeared three cases of chorea minor were under observation at the Children's Clinic of Stanford University Medical School. The usual measures of rest and abundant nutrition had been only partly successful in ameliorating the symptoms and the children were all showing definite choreic movements. Treatment by the Goodman method was accordingly instituted.

The serum was obtained by drawing the blood as rapidly as possible, with the utmost precautions against contamination, from the median basilic vein, allowing it to stand over night in the ice chest, centrifuging and pipetting. It was then inactivated for one hour at 56° C. Although Goodman does not mention inactivation, certain experiences with the Swift-Ellis method have made the use of unheated serum for intraspinal injections appear to be unwise. About 20 c.c. of cerebrospinal fluid should be withdrawn and 15-18 c.c. of serum injected, very slowly.

* From the Pediatrics Service of Stanford University Medical School.

A reaction of varying violence, consisting of headache and sometimes of vomiting, may be expected within twenty-four hours, but has never been of serious proportions. Goodman recommends that no medication should be given for at least four days before the serum is injected.

The case histories of the three patients treated here are as follows:

Case 1. L. G., male 11 years old. Admitted September 16, 1916. Complaint: nervous twitchings for the past 1½ years. Family history unimportant. Past history: Had pneumonia in early childhood. Has had frequent winter colds. Just before the onset of the present illness, had an attack of abdominal pain which was diagnosed as appendicitis and from which he recovered without operation. Tonsils and adenoids removed, probably several years ago, as patient does not remember the time. Drinks a good deal of coffee and tea, but has not had an opportunity for overindulgence for more than a month. Is usually constipated.

Present Illness: This began in the spring of 1914, shortly after the attack of "appendicitis." It has maintained about the same degrce of severity since then.

Physical Examination: The principal abnormalities found are faulty posture, clubbed fingers, deviated nasal septum, dental caries, and a soft, systolic murmur at the apex with an accentuated second sound. Grimaces, shrugging movements of the shoulders, blinking, and occasional jerking movements of the body are seen. The reflexes are lively. The tonsils have been cleanly removed.

On September 22, 50 c.c. of blood were taken and on the following day 20 c.c. of cerebrospinal fluid were withdrawn and 15 c.c. of serum injected. On the next day he complained of headache, but on the following day he was perfectly comfortable. He was kept under observation at the hospital until October 2; up to that time and since the time of injection, no choreic movements were seen. Two weeks later I was informed that he had had no return of movements, but since then he has unfortunately been lost sight of.

Case 2. H. R., male, 8 years old. Admitted September 30, 1916. Complaint: nervousness. Family history unimportant. Past history: whooping cough and measles at three years of age. Tonsils and adenoids removed June 8, 1916.

Present Illness: At the time of his first visit two years ago to the clinic, he was said to have had twitchings for two years, so that this is a case of four years' standing. His symptoms consist of general "nervousness," shrugging of the shoulders, peculiar movements of the hands, a habit of dropping articles from the hands, and of making faces, and a jerky, irregular gait.

Physical Examination: The principal abnormality, besides the evidences of chorea, is enlargement of the heart with a very loud, blowing systolic murmur, loudest at the apex and transmitted to the axilla and back. The choreic movements are as described in the history. The case is one of moderate severity. 20 c.c. of serum were injected on October 4. The spinal fluid was under a considerable pressure and was still running freely after 40 c.c. had been removed. The injection was followed on the same day by headache and some vomiting. The headache required two days to subside entirely. Chorcic movements entirely disappeared on the second day and have not returned. He was last seen December 11. The mother states that "he does not shake any more." A remarkable improvement in the general condition has taken place, but the murmur is still loud.

Case 3. E. G., male, 11 years old. Admitted October 4, 1916. Complaint: nervousness. History: the early history is unobtainable. He was first brought to the clinic September 3, 1915, and at that time the only abnormalities were slightly enlarged tonsils and cervical glands, and a few decayed teeth. On January 21, 1916, he was again brought to us, suffering with acute follicular tonsillitis and acute bronchitis. This lasted about three weeks. Again, on February 24 he came to us for headaches. An examination in the eye clinic showed the presence of hypermetropia, for which he was given glasses.

On September 7 the first symptoms of chorea were observed and for the first time signs of cardiac trouble were elicited. The heart was enlarged and a systolic murmur, loudest at the apex and transmitted to the axilla, was heard. Choreic movements—grimaces, gulping movements, shrugging and twisting movements of the body—were of moderate severity when I examined him on September 29. Rest in bed and a liberal diet, combined with the administration of Fowler's solution had been tried for three weeks with little effect. Fifteen c.c. of serum were injected on October 5. The cerebro-spinal fluid in this case was under markedly diminished pressure, flowing at the rate of one drop every two minutes, and only 5 c.c. could be obtained. The serum was injected very cautiously and the needle was left in place for fifteen minutes, in case pressure symptoms should occur. It was a remarkable fact that the injection of this amount of fluid caused no apparent rise in the intradural pressure and the subsequent reaction was milder than in the other two cases, consisting only of a slight, transient headache. No choreic movements were observed after October 9. He was last seen December 15. The foster mother, who is taking care of him, states that she has not noticed any further nervousness. The condition of the heart remains unchanged.

The spinal fluid in all three cases was completely normal as regards cell count, globulin and reduction of Fehling's solution. In the first two, the Lange colloidal gold test was negative, but it could not be done in the last. Pressure was normal in Case 1, increased in Case 2 and decreased in Case 3. It seems unlikely therefore that mere drainage or reduction of pressure could explain the effect of this treatment. In these three cases an almost immediate cessation of choreic movements followed a single injection of the patient's own serum into the spinal canal, and no recurrence of symptoms has occurred in a little over a month.

It is not within the scope of this paper to discuss exhaustively the theoretical aspects of the Goodman treatment. There are many gaps in our knowledge both of the pathology of chorea and of the drainage of the subarachnoid space and the ventricular system which must be filled before we can expect a satisfactory explanation. It is generally recognized that chorea is a bacterial disease, due to a streptococcus of the viridans group. Embolic foci in the deeper parts of the cortex, in the subcortical white matter and in the basal ganglia, perivascular infiltration with small cells, and oedema have been described.[3] It is difficult to understand, from our present knowledge, how these deep lesions could be influenced by substances in-

troduced into the cerebrospinal fluid. Meningeal lesions, however, would be readily accessible and it is interesting to find that Dana[4] discovered the presence of "chronic leptomeningitis of the convexity of the brain, slight meningitis of the upper part of the spinal cord . . . diplococci in the proliferating tissue between the meninges and the brain"; and that Poynton and Paine[5,6] in four autopsies of chorea found congestion, thrombosis and perivascular infiltration with small cells and streptococci in the pia mater, as well as in the brain itself. Preobrachensky's[7] autopsy also revealed a severe pachy- and leptomeningitis. We have, therefore, at least the beginning of a rational explanation, but it is perhaps best, at the present, to take the treatment on an empirical basis. Its clinical effects seem to be unquestionably good in a considerable proportion of cases and it is certainly worthy of a further trial.

I hope to be able to report a larger series of cases with more extended boservations in a later communication.

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TYPHUS EXANTHEMATICUS IN SAN FRANCISCO.

By I. C. BRILL, A. B., M. D., San Francisco, Cal.

This case is reported not because of its unusual features but rather because of its rare occurrence in this part of the country.

History: Peter P., 26 years old, single, Italian, owner of fruit and vegetable store, first consulted a physician on June 4 complaining of "severe headache" and "fever." His family and past history is negative. He has always been well up to the present illness. His habits are good and he usually sleeps at home in excellent surroundings. But nine or ten days before he took ill he slept in a rooming house of questionable cleanliness. Six days later his head began to feel heavy and would constantly draw back; and his neck felt stiff.

Three or four days later (June 2) he had a definite chill and the next day he took to bed. On June 4 when first seen by a physician his temperature was 102°.

Examination: On June 4 when I first saw him his temperature varied between 102° and 103°. Face was flushed, tongue coated, conjunctivae slightly injected, pupils normal, throat red and congested. On the skin of the abdomen there were numerous dull pink spots from 2 to 5 m.m. in diameter, disappearing on pressure. Heart and lungs were negative. Abdomen slightly tender. Spleen readily felt about 4 c.m. below costal margin, firm, slightly tender. Reflexes normal, neck not rigid. No Kernig, no Babinski.

Laboratory findings: Leukocytes 7000, polymorphonuclears 64%, lymphocytes 34%. Diazo negative, Widal negative with both typhoid and paratyphoid cultures. Blood culture (aerobic) remained sterile at the end of seven days.

The next day (June 8) the patient complained of severe headache and sore throat. Examination revealed a very marked injection of the conjunctivae. Throat was red and congested and there were a few pustules and vesicles on the soft palate (enanthema). The entire abdomen was mottled with a maculo-papular eruption of irregularly-shaped spots, 2 to 6 m.m. in diameter, rose colored, disappearing on pressure. On the sides of the chest and his back there was a purpuric eruption of spots similar in shape and size to those on the abdomen, but of dark red color and not disappearing on pressure. There was a very faint subcuticular mottling on the extremities.

Laboratory findings: Leukocytes 17,000, Widal negative, Diazo negative. An anaerobic blood culture on ascitic glucose agar was taken on the same day; but no growth was obtained.

During the following seven days the patient's temperature ranged between 101° and 104° with rather marked morning remissions. The chief symptom was severe headache; but there were no other marked cerebral symptoms. The average leukocyte count was about 14,000. The urine was examined daily for the Diazo reaction, and the blood for the Widal reaction (with typhoid and paratyphoid cultures), both with negative results. Several blood cultures were taken, all remaining sterile. The stools were cultured for typhoid and paratyphoid with negative results. On June 13, the 12th day of the disease, the temperature fell by crisis to 99°, and after a single rise of one degree on the next day it remained normal for the rest of the time during which the patient was under observation (two weeks after the crisis). Since the day of the crisis the rash faded very rapidly with considerable scaling of the skin of the chest (over the purpuric spots). The hemorrhagic areas left a dull red, brownish pigmentation still present at the time the patient was discharged (two weeks after the crisis).

The clinical picture just described corresponds more to the type of disease endemic in New York to which the attention of the profession was called in 1910 by N. E. Brill,[1,2] and which was conclusively proved by the cross immunity experiments of Anderson and Goldberger[3] to be a mild form of typhus exanthematicus. The most interesting recent development in connection with this disease is the discovery by Harry Plotz in 1914 of an anaerobic, gram negative bacillus in the blood of patients suffering from this disease, the same organism being isolated from both the mild and the severe epidemic type of typhus. The medium employed by Plotz is an ascitic glucose (5 to 2%) agar. With this medium under strict anaerobic conditions, he was able to isolate the organism in all of seven cases of epidemic typhus studied during the febrile period of the disease, and in 18 out of 34 cases (53%) of the mild endemic type.[5] The blood culture in our case was negative although the technic advised by Plotz was carefully followed. This, however, is not at all surprising if we recall the fact that our case was definitely of the mild type, and that in this form of the disease the blood cultures were positive in only about 53% of the cases reported by Plotz.

The work of Plotz has been confirmed recently by his co-workers in Mexico, Olitzky, Denzer and Dusk.[6] These investigations were about to supply the finishing touches in establishing the relationship between the "bacillus typhi exanthematici" and typhus fever when, unfortunately, their work was interrupted by the recent disturbances in Mexico. The difficulty in finally establishing the direct causative relationship between this organism and typhus fever lies in the fact that the injection of large quantities of the bacillus does not induce the typical typhus reaction in susceptible animals (the monkey and the guinea pig,[7] even though

such reactions are comparatively readily induced with typhus blood.* Baehr, Plotz and Olitzky [5] explain this fact by the assumption that the bacilli rapidly lose their virulence when grown artificially, even in the original culture taken directly from the blood of the typhus patient. There is another explanation which suggests itself; namely, that in typhus blood the baeilli, though few in number, are fortified with anti-immune bodies (probably present in large quantities before the crisis), which protect the organisms against the natural immunity forces in the new host and thus enables them to multiply and cause the disease. On the other hand, a suspension of bacilli taken from an artificial culture, being free from anti-immune bodies, are quite rapidly destroyed by the natural immunity of the new host. The fact that the organisms disappear from the blood of a patient within 24 to 36 hours after the crisis speaks in favor of this theory, as it illustrates the rapidity with which the bacilli are destroyed when the balance of immunity is on the side of the host. It is probable that if the bacilli were suspended in filtered typhus blood taken at the height of the disease and then injected into a susceptible animal, they might then cause the typical typhus reaction with greater regularity, the bacilli now being protected by the anti-immune bodies in the filtered serum. This suggestion is made with the hope that workers who have an opportunity to study typhus cases may try this simple experiment and thus may possibly help finally to solve the important problem of the etiology of typhus exanthematicus.

* In two instances Baehr, Plotz and Olitzky were successful in obtaining a reaction in guinea pigs following the injection of cultures of bacillus typhi exanthematici obtained from two epidemic cases (Jour. Infec. Dis. 1915 17, 1, pp. 52-56). Unfortunately both of these animals died before the exact nature of these reactions could be determined by immunity studies. Olitzky, Denzer and Husk,[6] in their more recent studies in Mexico, found that "the injection into a guinea pig of a colony taken directly from the blood culture tube proved the organism to be pathogenic." But in this instance, too, apparently no immunity studies were possible on account of the sudden interruption of the work.

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University of Oregon, Department of Medicine, Portland, Oregon.

SULPHUR AS A REMEDY FOR RHEUMATISM.

By W. F. McNUTT, Sr., M. D., San Francisco.

According to the London Lancet, February 6th, 1915, Sir Lauder Brunton made a discovery, accidentally, however, viz: that sulphur is a potent remedy in rheumatism. Sir Lauder had a patient with rheumatism in the hand which his remedies failed to cure. A friend of the patient's, a kindly old lady of course, told her to put sulphur in her stockings, which she did, and her rheumatism was completely cured. Sir Lauder expressed surprise, not only that the sulphur in her stockings cured the patient, but that the silver bangles that the patient wore on her arms turned black.

Verily there is nothing new under the sun. If Sir Lauder had consulted Dr. H. W. Fuller's old work, London Edition, 1825 on rheumatism, rheumatic gout and sciatica, he would have found sulphur highly recommended for these diseases. Fuller states that it was then an old domestic remedy in the north of England for the diseases. I have many times used it with excellent results in sciatiea, by taking a long flannel bandage, rubbing the sulphur into it as one would plaster of paris in a mesh bandage, and wrapping the whole leg. Any silver article in the pocket or ornament worn by the patient will be blackened in 48 hours. The absorbed sulphur eliminated by the skin and bowels is the sulphide; that eliminated by the kidneys is the sulphate.

SOCIAL INSURANCE COUNTY COMMITTEES.

Alameda County—Dr. H. S. Delamere, chairman; Dr. F. H. Bowles, Dr. H. A. Makinson.

Butte County—Dr. Edw. E. Baumeister, Dr. N. T. Enloe, Dr. J. O. Chiapella.

Los Angeles County—Dr. Wm. Wenzliek, chairman; Dr. J. Ross Moore and Dr. T. Pereival Gerson.

Mendoeino County—Dr. L. C. Gregory, Dr. Oswald H. Beekman, Dr. H. O. Cleland, Dr. S. L. Rea, Dr. E. H. Sawyer.

Stanislaus County—Dr. B. F. Surryhne, Dr. F. R. Delappe, Dr. E. V. Falk.

Sacramento County—Dr. E. M. Wilder, chairman; W. A. Beattie and J. P. Dillon.

San Bernardino County—Dr. G. G. Moseley, Dr. Carroll C. Davis, Dr. C. G. Hilliard.

San Diego County—Dr. Homer C. Oatman, Dr. R. J. Pickard, Dr. Harry Wegefarth, Dr. P. M. Carrington, Dr. R. L. Doig.

San Franeisco County—Dr. John H. Graves, ehairman; Drs. Rene Bine, F. W. Birteh, F. B. Carpenter, A. W. Hewlett, T. W. Huntington, J. H. O'Connor, Langley Porter.

San Joaquin County—Dr. L. Dozier, chairman; Dr. Mary Taylor, C. F. English.

Orange County—Dr. H. M. Robertson, Dr. J. I Clark, Dr. A. M. Weedie.

Santa Cruz County—Dr. J. M. Gates, Dr. Keck, Dr. E. E. Porter.

Sonoma County—R. M. Bonar, J. W. Cline, N. R. H. Juell.

Tulare County—A. W. Preston, J. T. Melvin, R. N. Fuller.

Ventura County—Dr. D. W. Mott, Dr. C. A. Jensen, Dr. B. E. Merrill, Dr. H. B. Osborn.

San Mateo County—Dr. A. L. Offield (chairman), San Mateo, Cal.; Dr. J. L. Ross, Redwood City, Cal.; Dr. A. R. Moodie, Redwood City, Cal.

Committee on State Industrial Accident Laws.

Los Angeles County—Dr. Wm. R. Moloney, chairman; Dr. E. H. Southworth and Dr. C. P. Thomas.

SOCIETY REPORTS

ALAMEDA COUNTY.

Following is a report of meetings held during November:

November 10th.

Dr. Bowles, chairman.

I. Diagnosis and treatment of acidosis, especially in diabetes. Dr. Albert H. Rowe.

II. Management of eclampsia cases. Dr. Edward N. Ewer.

III. The care of the breasts. Dr. Dudley Smith.

November 20th.

Regular monthly meeting. Program arranged by Dr. Dudley Smith.

I. The relief of pain in labor. Dr. Dudley Smith.

II. Present status of gas-oxygen anesthesia and twilight sleep. Dr. F. W. Lynch, San Francisco.

III. Technic of gas-oxygen administration in labor. Dr. Florence Sylvester.

IV. The application of anoci-association to obstetrics. Dr. Carl L. Hoag, San Franeisco.

E. E. BRINCKERHOFF, Secretary.

FRESNO COUNTY.

October Meeting.

The regular monthly meeting of the Fresno County Medical Society was held on the evening of October 3, 1916, in the offices of Drs. Anderson, Pettis, Schottstaedt and Benedict. Dr. Willson, president, presided.

Present: Drs. Mathewson, Schottstaedt, Benedict, Boyd, Yates, Mitchell, S. M. Long, Thompson, Petersen, McKenney, Miller, Walker, Dixon, Foster, Willson, Pettis, Couey, Aiken, G. L. Long, G. A. Hare, Sweet and Staniford.

The application of Dr. J. A. Gillespie of Kingsburg for membership in the society was read, and referred to the Committee of Censors before being sent to the secretary of the State Society for consideration.

The usual monthly bills were ordered paid.

The Milk Committee, through its chairman, Dr. Aiken, reported that Fresno would have a certified milk supply withina very short time.

A committee of three was appointed to draw up resolutions in respect to Dr. J. A. Rosenberger, who was recently killed by the overturning of his automobile. Dr. Rosenberger had been a practitioner of Fresno County for twenty-two years. The president appointed Drs. J. R. Walker, C. O. Mitchell and G. L. Long to draw the resolutions.

It was moved, seconded and carried that Dr. C. O. Mitchell be appointed by the society as a visiting member of the staff of the tubercular clinic.

Moved, seconded and carried that a committee of two be appointed to solicit the support of the members of this society toward the proposed State Indemnity Insurance organization.

Dr. Frank Hinman of San Francisco was the guest of the evening and gave a most interesting and instructive talk upon the subject "Urological Diagnosis in General Practice." Dr. Hinman showed a number of lantern slides and reproductions of pyelograms. He also showed a number of interesting gross pathological specimens of the urinary tract, most of these being unusual specimens of kidney stone.

The invitation of Drs. Trowbridge and Craycroft to meet in their offices for the November meeting was accepted.

After the usual social hour with refreshments, the meeting adjourned.

November Meeting.

The Fresno County Medical Society held the regular November meeting on the evening of the 7th in the offices of Drs. Trowbridge and Craycroft. Dr Willson, president, presided.

Minutes of previous meeting read and approved. Roll call: Petersen, Butin, Thompson, S. M. Long, Jones, Pettis, Wilson, Foster, Aiken, Dixon, Manson, Barr, Hayden, Couey, Nicholson, Miller, Craycroft, Mathewson, Benedict, McConnell, Morgan, Mitchell, Staniford, and Drs. Howard Ruggles and Wm. Behlow of San Francisco as guests.

Transaction of routine matters. It was announced that Dr. I. M. Rubinow, consulting actuary of the Social Insurance Commission, would speak to the members of the society on the evening of November 15.

A committee of three was appointed to draw resolutions out of respect to the late Dr. E. C. Dunn. Drs. T. M. Hayden, W. T. Barr and Geo. H. Aiken were appointed.

Dr. Howard Ruggles of San Francisco showed a large number of X-ray pictures of the chest in illustration of the subject, "X-ray Diagnosis of the Chest." This series of pictures was indeed instructive and everyone felt indebted to Dr. Ruggles for going to the trouble of bringing this large collection of plates with him. Dr. Behlow was with Dr. Ruggles, and we hope that they will be good enough to visit us at another time.

After refreshments, the meeting adjourned.

KENNETH J. STANIFORD,
Secretary.

IN MEMORIAM.

WHEREAS, An allwise Providence has seen fit to remove from our membership Dr. J. A. Rosenberger, one of our senior members, a physician of Fresno County for twenty-two years, and a capable brother practitioner; therefore be it

RESOLVED, By the Fresno County Medical Society, in session assembled, that this society express regret at the loss of one of its members and extend the sympathy of this body to the widow and family; and that this resolution be spread on the minutes, and that a copy be forwarded to the widow in token of our respect and esteem.

(Signed) J. R. WALKER,
C. O. MITCHELL,
G. L. LONG,
Committee.

IN MEMORIAM.

Dr. E. C. Dunn located in Fresno in the spring of 1889. He was secretary of the U. S. Board of Pensions for several years. He immediately affiliated with the Fresno County Medical Society, once or twice its honored president, and until failing health began, he was an active and constant attendant on its meetings. At the time of his death he was a member of the American Medical Association, State, and County Medical Societies. Dr. Dunn stood for all that is highest and noblest in the medical profession, more than all else, he prized the confidence and esteem of his brother practitioners. He was ever faithful to the ancient tenets of his profession, strictly ethical, and honorable to a fault. He was not only a skillful physician and surgeon, but also a high-minded, honorable gentleman of the old school.

WHEREAS, It has pleased the Almighty in His infinite wisdom, to remove from our ranks our friend and fellow physician, Dr. E. C. Dunn, one whom we always esteemed for his high professional attainments; therefore be it

RESOLVED, That we, the members of the Fresno County Medical Society, express our deep sorrow at the loss of this member, whose companionship we sadly miss.

RESOLVED, That we tender our sincere sympathy to the members of the family into whose lives this sorrow has come; and be it further

RESOLVED, That a copy of these resolutions be sent to the family of the deceased, that a copy be inserted in the State Journal, and a copy be placed in the minutes of the Fresno County Medical Society.

(Signed) T. M. HAYDEN,
W. T. BARR,
GEO. H. AIKEN,
Committee.

KERN COUNTY.

Regular November meeting called to order by Dr. A. I. Fraser, in the new quarters of the society in the City Hall, with the following members present: Drs. S. F. Smith, C. S. Compton, T. M. McNamara, F. A. Hamlin, J. A. Copeland, W. P. Scott, C. W. Kellogg, C. A. Morris, J. W. Hull,

W. H. Cook, G. H. Bahrenberg, F. Crease, H. Rogers, G. H. Shrodes and F. J. Gundry.

A committee of three, Drs. S. F. Smith, F. A. Hamlin and J. H. Copeland, were appointed to make arrangements for the annual banquet, December 15.

Paper of the evening, prostatectomy, with lantern slides and specimens, by Dr. D. W. Dakin of Los Angeles, with discussion by members. Adjourned.

F. J. GUNDRY, Secretary.

RIVERSIDE COUNTY.

The regular monthly meeting of the Riverside County Medical Society was held December 11, 1916, at the Elks' Club, Riverside. The following program was presented:

"Medical Legislation," Dr. John C. King, of Banning, Cal.

"The Therapeutics of Hexamethylamine," Dr. Paul E. Simonds, of Riverside.

Officers elected for the year 1917 were:

President, Dr. W. S. Davis, of Corona.

Vice-President, Dr. R. E. Moss, of Riverside.

Secretary-Treasurer, Dr. A. E. Strong, of Riverside.

SACRAMENTO SOCIETY.

The regular November meeting of the Sacramento Society for Medical Improvement was called to order at 8:30 p. m. by Vice-President J. W. James.

Minutes of previous regular and special meetings read and approved.

Cases reported: None.

Paper of the evening: Some Aspects of Treatment of Poliomyelitis, read by Harold W. Wright, M. D., of San Francisco.

Discussion opened by Dr. A. M. Henderson. Discussed by Drs. E. Pitts, J. Parker Dillon, G. A. Foster, closed by Dr. Wright.

A. L. Munger elected to membership.

Report of Board of Directors read.

Adjourned at 10:30 p. m.

F. F. GUNDRUM, M. D.,
Secretary-Treasurer.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of November, 1916, the following meetings were held:

Section on Medicine.

Tuesday, November 7, 8:30 P. M.

1. Tests of Typhoid Immunity and Comparison of Two Methods of Vaccination Against Typhoid Fever.....E. S. Kilgore
2. Granuloma Pyogenicum .....D. W. Montgomery and G. D. Culver
3. Roentgen Conclusions from 124 Operated Gastroenterostomy Cases.....H. E. Ruggles and Lloyd Bryan

General Meeting.

Tuesday, November 14, 8:30 P. M.

1. Demonstration of Cases.....G. E. Ebright
   A. Tumor of Mediastinum.
   B. Case of Amebic Dysentery in Man who has never been out of California.
2. A Question of Ethics; What Constitutes Proper Dismissal of a Physician?.....H. J. Kreutzmann
3. The Value of Intravenous Injections of Colloidal Solutions in Hemorrhage.....S. H. Hurwitz
4. Report of Case of Ulcer of Duodenum, with Tetany.....René Bine

Nominations of Officers.

Section on Surgery.

Tuesday, November 21, 8:30 P. M.

Obstetrical Meeting.

1. Eclampsia—What is it?.....F. W. Lynch
2. The Prophylaxis of Eclampsia...R. K. Smith
3. The Treatment of Eclampsia..A. B. Spalding

Owing to the death of Dr. Jones, the meeting of the Eye, Ear, Nose and Throat Section was not held on November 28.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held in the Chamber of Commerce quarters Friday evening, November 24th. Those present were: Drs. F. P. Clark, Margaret Smyth, L. Dozier, A. E. Edgerton, G. W. Walker, B. F. Walker, W. J. Young, H. J. Bolinger, Minerva Goodman, C. F. English, R. T. McGurk, W. Priestly and D. R. Powell, with Dr. Harold Wright of San Francisco and Dr. Musgrove as guests.

After a business session and nominations for the Board of Directors for 1917, the president introduced Dr. Wright, who read a paper on "Obstetrical Paralysis, Its Causes and Treatment." The doctor's paper was very complete and was appreciated by all the members present, many of whom joined in the discussion at its conclusion. The meeting adjourned at 10 p. m.

DEWEY R. Powell, Secretary.

LOS ANGELES COUNTY.

Eye and Ear Section.

The regular meeting of the Eye and Ear Section was held in the office of Dr. Hugo Kiefer, Brockman Building, November 6, 1916. Attendance: Drs. Bullard, Brown, Dudley, Detling, Fleming, Griffith, Graham, Harris, Kress, Lefler, Montgomery, Stivers, Swetman, Tholen, True, Kiefer and Kelsey. Visitors: Drs. Gage, Sleeper, Hoemer and Jesberg.

Minutes of previous meeting read and corrected at the suggestion of Dr. Kress as follows:

In Dr. Harris' case mention was made that a certain patient was reported by him at the last meeting as having been neglected at the County Hospital. Dr. Kress wished to state that the patient was examined by several specialists, among them Drs. Bogue, Jesberg, Brown, McCoy and Old, and given proper diagnosis and treatment. Dr. Harris replied he was merely quoting what the patient told him.

Report of Cases.

Dr. Bullard: Case of trauma of the eye, a cut two-thirds across the cornea, some loss of aqueous humor; treated two weeks with heat.

2nd case. An ulcer of the cornea, treated with heat.

3rd case. An ulcer of the cornea, treated with heat and yellow oxide of mercury ointment. Dakins' solution used in one case of profuse discharge; disappeared after fourth washing.

Dr. Harris: Case unique in my practice. Total absence of the iris in either eye, a supra-luxation of either lens. He wears bifocals and strong magnifying glasses, doing school work and keeping up with his classes, also has bipolar cataract and nystagmus; prognosis is bad.

Dr. Kiefer showed specimen of post-nasal polyp from the posterior end of the septum, an unusual location, and removed by snaring. History of one year of nose blocking, no nasal discharge, no pain, polyp pedunculated, by raising palate could see it from mouth.

Dr. Kress: Reported case of women practically blind in both eyes. The patient, a woman of 45, gives the history of having had good vision in

each eye up to two days ago. At that time trouble started in the right eye, with a sensitiveness as if there was something scratching. She does not remember the details other than that the inflammation subsided without any special pain or distress, and without any particular loss of vision. At the end of several months there was a recurrence in the same eye, and before the trouble had subsided, the left eye became inflamed, which condition continued until about a year ago, when vision was lost to about the same extent as at present. During the last year she has not been under the care of physicians, although during these inflammatory attacks she was under supervision. She presented herself at the clinic the other day, and an examination showed a right globe that had a minus 2 tension, and a left globe that had a plus 2 tension. The chambers in each eye were very shallow, especially so in the right, and the iris of the right was seemingly very friable and atrophic. There did not seem to be any pigment at the iris edges, but the pupil has not been dilated. The lenses in each eye are cataractous, but there is no exudate present. The cornea of the right eye shows a scar from an old ulcer. The right eye has evidently undergone degeneration. Whether the condition arose as a result of a glaucomatous condition, or whether there was an inflammation of the uveal tissues, is a question. It would be interesting to obtain from the physicians who attended her more definite history.

Dr. Detling's discussion of Dr. Kress' case: The important point in the etiology was a question whether it was tuberculosis or leutic, there might have been an ulcer with perforation and uveitis in the right eye and the left eye involved by sympathy.

Dr. Graham's discussion: I thought it glaucomatous.

Dr. Kelsey's discussion: I had a case similar in features, had large perforation ulcer, pain was relieved suddenly in the night.

Dr. Lefler's discussion: I think the case was iridocyclitis.

Dr. Montgomery showed three specimens of polypi.

1st case. Post-nasal polypi from boy of 11, used cocaine in operation, removed polyp. It sprang from the posterior ethmoidal cells and showed below level of the soft palate.

2nd case. Boy of 16. Polyp removed from nose; had been cauterized by another physician and necrosis had set in.

3rd case. Polyp protruded in the ant- and post-nares and in the throat.

All three cases proved extremely easy of removal by the following technic: First shrink down mucosa and with cocain find spot of attachment of the pedicle, then place curved tonsil knife around the base and with sawing motion and no traction cut off the polyp and its base. I am opposed to pulling out polyps from nose. The tonsil knife should be very sharp and set at an angle to the handle.

Report of the Membership Committee.

The application of B. C. Davies being favorably reported by the secret membership committee, a written secret ballot was taken. The chairman appointed Drs. Griffith and Graham tellers.

Result: Votes cast, 11, Favorable, 11. Dr. C. B. Davies declared elected.

New Applications.

Dr. C. M. Hosmer of San Diego was received and referred to the secret membership committee.

The following communication from the secretary of the Los Angeles County Medical Association was received November 6, 1916:

"To the Eye, Ear, Nose and Throat Section,
Care Dr. C. G. Stivers, Secretary,
503 Auditorium Bldg.,
Los Angeles, Cal.

Gentlemen:

I call your attention to the fact that among the list of applicants for membership in the Los Angeles County Medical Association are three eye, ear, nose and throat specialists; namely, Drs. Curtis M. Beebe, W. Fred Stahl and Simon Jesberg.

The Membership Committee has been requested to forward these applications to you before taking action thereon. Very truly yours,

GEO. H. KRESS, Secretary."

After free discussion of the advisability of taking definite action in regard to applicants the following motion to amend was received from Dr. Kress:

Amendment to Article III of Section 7.

The rule of procedure in regard to eye, ear, nose and throat specialists who apply to the Los Angeles County Medical Association for general membership, and whose applications are then referred by the board of Council of the society at large, to this section, as regards eligibility, shall be as follows:

Such applications referred to this section shall be transmitted by the section secretary to the secret membership committee of this section. That committee shall then recommend or not recommend and so report to this section. A written yes or no ballot shall then be taken on the adoption of the membership committee's report. A majority shall decide.

This action of the section shall then be sent to the secretary of the Los Angeles County Medical Association, by him to be transmitted to the secret membership committee of that society.

It is expressly understood that recommendation, or rather willingness, to permit an applicant to become a member of the Los Angeles County Medical Association at large, does not obligate this section to necessarily vote such specialist into membership in this section, should he later apply thereto.

Unfinished Business.

The chairman of the executive committee stated that they had decided to dispense with the joint meeting with the Los Angeles County Medical Association for this year.

Discussion by Drs. Kress, Graham, Fleming, Dudley, Kelsey, True, Stivers and Detling. The consensus of opinion being that it would be best to dispense with the joint meeting.

Dr. Fleming moved that the report in regard to the joint meeting with the Los Angeles County Medical Association be accepted. Seconded by Dr. Dudley. Carried.

December 4, 1916.

Dr. Grant Selfridge read a paper entitled, "Demonstration of Intra-Nasal Cosmetic Surgery," with colored lantern slides. He said, in part, that the correction of nasal deformities was of great importance both from a cosmetic and physiological standpoint, all his work had been done intranasally and he had utilized bone and cartilage grafts, sometimes from the septum and sometimes from the rib and scapula. The first incision is made inside the nostril between the skin and mucous membrane and outer surface. He separates freely all tissues up to the frontal bone. The graft of bone and cartilage from the rib should be removed by an assistant, and its removal timed to arrive when the nose is ready for it, so as to avoid curling up of the edges. For this reason, the graft should never be put in a salt solution as it causes curling. Over correction is not a fault to be avoided as there is considerable shrinkage in the tissues. After the operation the bone

and cartilage graft should be split and the medullary substance removed. Periosteum and perichondrium should be preserved as the graft will be more apt to grow in its new location with the natural covering than without. Sutures are often used in the nose and serve to hold the graft in place. Photographs of the nose are made both in profile and full face and radiographs are used to show the result of the grafting. The external dressing should receive special care. The application of adhesive straps passed from one side of the nose to the other and around the tip of the nose serve to preserve the shape. Intra-nasal splints are not used, but an external splint of table-felt soaked in silicate of soda serves to keep the nose in position. Syphilitic patients should not be operated upon as the bones are already diseased and liable to undergo further change. The very large noses of the Hebrew type may be made smaller by removing a section of the septum, and collapsed alae may be corrected by grafting or in case of excessive tissue by taking out a buttonhole section and bringing the edges together and applying sutures.

Discussion.

Dr. Kyle: I have tried this work in several cases, and I am very glad Dr. Selfridge is doing the work and doing it so well. In regard to the X-ray, it is very valuable as a means of diagnosis and I use it frequently. One interesting case I had was saved from a mastoid operation by having an X-ray picture taken. It showed no mastoid involvement so no operation was done. Stereoscopic pictures are valuable especially in sinus work. One can tell if pus is present and its level or whether polypoid degeneration exists.

Dr. Hastings: I was very much interested in both papers. I had almost formed the opinion that puncture was all that was needed to make diagnosis, but I find in ethmoid and sphenoid work stereoscopic radiography has been very satisfactory and is the coming method. In the ethmoid it will show how wide and how deep the ethmoid labyrinth is for operating. We are greatly indebted to Dr. Selfridge and Dr. Cambert for coming here to demonstrate these valuable methods to us.

Dr. Stivers: How young can children be operated on?

Dr. Selfridge stated, in answering, that it was necessary to preserve the triangular cartilage in children, so he removes very little except when it is thickened high up in the ethmoid region. After 7 years of age, he makes the usual incision on one side, separates all the mucous membrane and tissues down to the bone and removes the excess of cartilage. Dislocation of the columnar cartilage is treated the same as in adults.

Dr. Selfridge, in closing, said if he lived long enough he wanted to come again and give a talk on hay-fever, which is a hobby of his. He has recently, with Dr. Scheppergrell and Dr. Hall, been tabulating the various weeds and Compositae of California.

Dr. Edward G. Cambert, Roentgenologist of the Southern Pacific General Hospital of San Francisco, gave an interesting talk on stereoscopic X-ray pictures. He showed many interesting views of the sinuses.

The society extended a rising vote of thanks to the visitors.

Dr. Hosmer, of San Diego, was elected an associate member.

The secretary requested members to notify him by letter the exact wording of their specialty for the coming new list of members to be printed in the Constitution and By-Laws which are now being written.

Meeting adjourned for refreshments.

C. G. STIVERS, M. D., Secretary.

LANE LECTURES.

January 12, 1917.—"What Every One Should Know About Cancer." Dr. Harry M. Sherman, representing the American Society for the Control of Cancer.

January 26, 1917.—"Modern Efforts to Secure Painless Childbirth." Dr. Frank W. Lynch, Professor of Obstetrics and Gynecology, University of California.

February 9, 1917.—"Poliomyelitis." Dr. William C. Hassler, Health Officer of San Francisco.

February 23, 1917.—"The Importance of Proper Habits of Carriage as a Basis of Health." Illustrated. Dr. Harry L. Langnecker.

March 9, 1917.—"The Problem of Race and Race Prejudice." Prof. Arthur W. Meyer, Department of Anatomy.

March 23, 1917.—"Prevention of Blindness." Illustrated. Dr. Hans Barkan.

REPORT OF THE MEETING OF THE STATE BOARD OF HEALTH FOR DECEMBER, 1916.

The State Board of Health held its regular monthly meeting in Sacramento on December 2, 1916. There were present Dr. George E. Ebright, President, and Doctors F. F. Gundrum, Edward F. Glaser and Wilbur A. Sawyer.

Regulations for the prevention of scarlet fever were considered, amended and adopted. They will be published in the December Monthly Bulletin of the State Board of Health.

The action of the Secretary in removing the rabies quarantine on Lassen County on the basis of the investigation of Sanitary Inspector Ross was approved. The quarantine on Modoc County was allowed to remain, as rabies was still present.

A hearing was given to a physician who had been cited to appear and show cause why he should not be prosecuted for violation of the State Vaccination Act. He had been charged with issuing a certificate of successful vaccination to a student, whereas in fact he had not vaccinated him against smallpox with vaccine prepared under United States Government or State of California license, as required by the State Vaccination Act. The physician plead in his defense that he had been ignorant of the requirements of the act, that he had "vaccinated" him by the administration of pills of "variolinum," thinking this would give immunity, and that in future he would use only methods complying with the law. Of interest in the case was the evidence that the student, soon after taking the pills, had been vaccinated against smallpox with a resulting primary vaccinia, showing that no immunity had been produced by the so-called "internal vaccination." After carefully weighing the evidence the Board dismissed the case with a warning.

A report of the committee on the need for a psychopathic hospital was presented by Dr. George E. Ebright. The committee recommended that legislation be initiated providing for an appropriation of $500,000 for the building and equipment of a research psychopathic hospital, to be under the control and charge of the Board of Regents of the University of California. The committee favored also the establishment of a State industrial farm for the care and treatment of inebriates and drug addicts.

The temporary permit of the West San Joaquin Valley Water Company to furnish water to the people of Los Banos was revoked, as it was shown that the company had not met the conditions required by the Board and was supplying a dangerously polluted water. The Board ordered that legal proceedings be initiated to compel compliance with the requirements.

A women's ward of 23 beds in the Tuberculosis Department of the Los Angeles County Hospital

was declared eligible for the State tuberculosis subsidy, in accordance with the recommendation of the Director of the Bureau of Tuberculosis.

It was decided that the next examination of graduate nurses for certificates as registered nurses should take place on April 18 and 19, 1917, in Sacramento, Los Angeles and San Francisco. Certificates of registration were issued to 122 nurses who passed the recent examination, and to three nurses who qualified through reciprocity. Thirty nurses failed to receive the required grade in the examination

Hearings were given to a large number of food and drug cases. One hundred and fifteen citations had been sent out. The cases of two men who sold mineral waters under fraudulent claims were referred for prosecution. In one case the printed names of 32 physicians were exhibited as endorsers of the fraudulent claims for the water. In the other instance the mineral water was sold for the treatment of a long list of diseases including diphtheria. W. A. SAWYER, Secretary.

BOOK REVIEWS

A Practical Treatise on Disorders of the Sexual Function in the Male and Female. By Max Hühner, M. D. F. A. Davis Co., Phila., 1916. Price $3.00.

The title of this work, while somewhat lengthy, is right, because the book is a practical treatise testifying to the author's large practical experience, and because it contains many a practical hint on various important questions of man's and woman's sexual life.

The reviewer must disagree with the author on a few points. General experience, in fact the history of the human race as far as known, contradict statements like the one that "a normal desire for sexual intercourse can easily be restrained by a few words of advice." We know that desires which can be restrained "by a few words of advice" are surely abnormally weak, and it cannot be repeated too frequently that physicians must look at things and conditions as they are, not as we would wish them to be.

Hühner warns that "massage of the prostate should never be employed when the patient is suffering from frequent pollutions," but we think that this statement should be modified, and that the etiological factor must be taken into consideration.

The author's arguments for continence are very good, nay excellent, but—while he expects that woman will impose virtue upon men, what we have seen so far in the shape of immediate consequences of the modern feminist movement makes us apprehend that just the opposite is most likely to happen.

Genito-urinary specialists will find in Hühner's book several valuable suggestions; the chapters on priapism and the one on enuresis we consider the best; his treatment of hyperesthesia of the deep urethra should be given a trial in all cases. It is surely no exaggeration to say that every physician should read his book; the disorders of the sexual function are met so frequently, and are only too frequently not recognized. V. G. V.

Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. Edited by P. G. Skillern, Jr., M. D., Philadelphia. October, 1916. Vol. V, No. 5. Published bi-monthly by W. B. Saunders Company, Philadelphia and London. 1916.

Contents.

Talk on varicose veins and varicose leg ulcers, Clinic for the Baltimore and Ohio Railroad Surgeons; series of unclassified illustrations showing certain features of Dr. Murphy's operative work; series of sketches showing a method of treating ankylosis of the fingers by grafts of costal cartilage; carcinoma of mucous membrane of cheek—ablation through Kocher incision; gunshot fracture of maxilla—reduction, plating, wiring; osteomyelitis of malar bone—incision and curettage; sarcoma of maxillary antrum—excision of maxilla; osteomyelitic necrosis of mandible—plastic reconstruction; cicatricial fixation of mandible following noma—release—interposition of mucosa flaps; degeneration cyst of neck (lymphadenitis)—ablation; lipoma of shoulder—ablation; lipoma of axilla—ablation; melano-epithelioma in pigmented mole of breast with metastases to axilla—ablation of tumor and enlarged axillary nodes; scirrhous carcinoma of breast—radical ablation; inguinal hernia—Andrews operation; carcinoma of cecum—ablation of tumor; chronic peritonitic obstruction of sigmoid flexure—disseverance of bands; large multiocular ovarian cyst of exceptionally rapid growth—ablation of cyst; lipoma of labium—ablation; urethral caruncle—ablation; prolapse of urethral wall—plastic resection; cicatricial obstruction of bladder outlet—suprapubic cystotomy and plastic; hypertrophy of prostate gland—suprapubic prostatectomy; tuberculosis of epididymis (bilateral)—excision of epididymis; coxa vara (unilateral) due to status lymphaticus hyperthymicus—conservative treatment; Case 1. Hyperplastic synovitis of knee-joint—partial capsulectomy—ablation of semilunar cartilages; Case 2. Polyarthritis with rice bodies in the knee-joint—arthrotomy with removal of rice bodies; varicose veins of leg—multiple resection; fibroma of leg—ablation; talipes equinovarus from birth palsy—elongation of tendo achilles—transference of tendon of tibialis anticus muscle; trophic sinus of foot—resection of metatarsal bone with excision of sinus.

The Operating Room, by Amy Armour Smith, R. N. Formerly Superintendent of New Rochelle Hospital, New York; Superintendent of Nurses at the S. R. Smith Infirmary, Staten Island, and at the Woman's Hospital of the State of New York. 12mo. of 295 pages with 57 illustrations. Philadelphia and London. W. B. Saunders Company. 1916. Cloth, $1.50 net.

The authoress of this book must be an excellent operating-room supervisor—energetic, alert, conscientious, and sensible of her responsibilities as a teacher of pupil-nurses. The book contains many good hints on the technic of operating-room nursing and clever observations as to the deportment of nurses, their relations to the surgeon and to the personnel of other hospital departments, the obligations of hospital managers toward the operating-room force, its equipment and supplies. There are politic suggestions on how to avoid the differences so often straining relations between operating room and hospital wards, as well as on the internal friction so common in operating rooms. Many pupil nurses may read it with a smile, but will take it well to heart for all that.

One cannot recommend it as a textbook: it lacks order and logical sequence, and omits much that a pupil nurse in the operating room should know or learn—many formulas for solutions, recipes and directions for preparing supplies, instrument lists for a number of important operations, etc., etc. As it is, however, head nurses and superintendents will find it sprightly and instructive reading.

L. E.

FEES FOR INDUSTRIAL ACCIDENT WORK.

Dr. ....., Aug. 7th, 1916.
....., California.

Dear Doctor:—

To meet and overcome to some degree the adverse results arising from the requirements occasioned by the State Workmen's Compensation Act upon the Insurance Companies I represent in the capacity of Medical Director, it has become necessary to propound and put into execution a system whereby these requirements are met in a beneficial manner to all interested.

This can be successfully accomplished by the appointment throughout the State of a staff of reliable and competent surgeons, and the sending of all injured employees for treatment to the appointed physicians covering the territory in which the accident happened.

The benefits of such a scheme as briefly outlined are, first:—the insured, the injured employee, and the Insurance Company are fully satisfied that no better or more proficient medical service could be rendered, overcoming the present fear and positive danger of injured employees being treated by incompetent men; secondly, the physicians appointed, of course, receive the benefit not only of an increased practise but a very lucrative income; the third benefit I think you will readily agree should go to the Insurance Companies controlling this work. Several schemes have already been propounded wherein the physicians securing the work are required to make a reduction below the present schedule adopted by the State of 25%; while some reduction below is unquestionably in order in view of the great increase of work given the physicians appointed, I personally feel that a 25% reduction is a trifle high and I have therefore recommended to my Companies that a return of 20% should be sufficient.

I should be pleased to go into the matter in further detail should you desire to become affiliated with us in the work, in any event a prompt reply containing your views on the subject will be appreciated. Very truly yours,

(Signed) .....,
Medical Director.

P. S.—We desire you to represent us as Chief County Surgeon in .....County.

..... has annotated this letter with "This was not even dignified by an answer. (Signed) ....."

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

(Devoted to the advancement of Pharmacy and its allied branches; to the work of the Council on Pharmacy and Chemistry of the American Medical Association, and to matters of interest bearing upon the therapeutic agents offered to the medical profession. The editor will gladly supply available information on matters coming within the scope of this Department.)

NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Nonofficial Remedies, 1916, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Swan's Bacillus Bulgaricus.—A pure culture in tubes of the Bacillus Bulgaricus. It is designed for internal administration and for direct application to body cavities, abscesses and wounds. The culture is supplied in boxes of twelve tubes. The tubes must be kept in a cool place and must not be used after the date stamped on the package. Swan-Myers Company, Indianapolis, Ind. (Jour. A. M. A., Nov. 25, 1916, p. 1601).

ITEMS OF INTEREST.

Intravenous Therapy.—The technic, although not difficult, must be thoroughly mastered, or undue pain, infection, air embolism, or even death may result. Often a drug has an action different from that obtained by the usual method of administration. Deaths have resulted not only from a lack of proper technic, but also from a lack of knowledge of drugs so administered. Thus death has followed the injection of an iron preparation containing peptone, and also following intravenous injection of ether. Intravenous injections, while sometimes superior to the slower methods, are distinctly inferior when a continuous rather than a sudden action is desired as with iodids, nitrites, iron or salicylates. Intravenous injections should not be resorted to unless distinct advantages are to be secured, as when immediate action is necessary in emergencies, where the drug is not otherwise absorbed or is destroyed in the stomach. In the light of our insufficient knowledge of the action of simple drugs when administered intravenously, the injection of complex mixtures of drugs is particularly reprehensible (Jour. A. M. A., Nov. 11, 1916, p. 1450).

Tartrates in Nephritis.—While the vegetable acids, such as citrates, burn to alkali in the body, the tartrates are not so converted, and leave the body nearly in their original form. Underhill and others have shown that tartrates in large doses can cause tubular nephritis in animals. While human beings tolerate without apparent kidney disturbance small doses of tartrates, either given medicinally or as they occur in baking powders and in certain foods, and while it would probably require very large doses to cause kidney inflammation, it would seem inadvisable to give food rich in tartrates or to give medicinally large doses of tartrates in nephritis (Jour. A. M. A., Nov. 25, 1916, p. 1601).

Unna's Paste for Varicose Veins.—In the treatment of varicose ulcers of a mild form Dr. Ochsner prepared a boot composed of several layers of a bandage, each treated with Unna's Paste applied hot. The paste consists of gelatine, 4 parts dissolved in 10 parts hot water to which 10 parts glycerine and 4 parts zinc oxide are added (Jour. A. M. A., Nov. 25, 1916, p. 1617).

Toilet Lotion.—Nothing is better to soften and whiten the skin than the official cold cream. For oily skins a tragacanth lotion is suitable (Jour. A. M. A., Nov. 25, 1916, p. 1618).

What Ailed Him?—A druggist wants to know what ailed the patient for whom the following was prescribed: Calomel 1 grain, potassium iodide 4 drachms, potassium bromide 3 drachms, potassium citrate 5 drachms, tincture of aconite 2 fluidrachms, wine of ipecac 1 fluidounce, chloroform water to make 3 fluidounces. Without venturing a guess regarding the patient's illness, it is suggested that if anything new was wrong with the patient after he took the medicine, the case may be diagnosed as one of misplaced confidence, either the physician's misplaced confidence in drugs or the patient's misplaced confidence in the physician (Jour. A. M. A., Nov. 18, 1916, p. 1541).

Some Misbranded Nostrums.—The following "patent medicines" were found misbranded by the federal authorities: A. D. S. Cod Liver Oil Comp., claimed by the American Druggists' Syndicate to be a sovereign remedy in pulmonary tuberculosis, was not possessed of the virtues claimed, nor a preparation of the active principles of pure Norwegian cod liver oil. Johnson's Chill and Fever Tonic, claimed to be a "guaranteed remedy" for dengue fever, typhoid fever, measles and la grippe, was a watery solution of Epsom salts and cinchonin hydrochloride. A. D. S. Peroxide Talcum Antiseptic and Deodorant, sold by the American Druggists' Syndicate with the claim that it contained a peroxide and to be a wonderful antiseptic and germicide, was found to have no antiseptic properties and no detectable peroxide. Dr. King's Royal Germeteur, claimed to be a "germ destroyer," was found to consist essentially of 98 per cent. water and 2 per cent. sulphuric acid, saturated with hydrogen sulphid (Jour. A. M. A., Nov. 18, 1916, p. 1541).

Patent Medicine Prosecutions under the Food and Drugs Act.—The following information was brought out in connection with prosecutions by the federal authorities chiefly under that portion of the Food and Drugs Act which provides penalties against misleading, false and unwarranted therapeutic claims: Dr. Porter's Antiseptic Healing Oil was found to be essentially a solution of camphor and carbolic acid in cottonseed oil. It was claimed to be an excellent remedy for cuts, sores, old chronic ulcers, corns, bunions and a preventive of whooping cough, diphtheria and tuberculosis. Ballard's Horehound Syrup Compound was sold "For Consumption, Coughs and Colds" and other diseases. Dr. Shoop's Night Cure, was claimed promptly to cure ulceration, inflammation or congestion of the womb, leucorrhoea, painful ovaries and other female diseases. It was found to be a suppository containing zinc carbonate, zinc sulphate and boric acid in cacao butter. Dr. Shoop's Cough Remedy was found to be a syrup containing ammonium benzoate and probably white pine tar and gum. Dr. Shoop's Restorative was sold for the cure of all diseases of the stomach, liver and blood, and still other diseases. Father John's Medicine was advertised as a consumption "cure." Dr. Shoop's Twenty Minute Croup Remedy was found to be a syrup containing glycerine and a small amount of salicylic acid. Bad-Em Salz was found to consist of sodium chloride, sodium sulphate, sodium bicarbonate, and a small amount of tartaric acid. It was sold with claims suggesting that it was derived from European springs and that it dissolved gallstones and gravel in the kidneys or bladder. Kennedy's Cal-Cura Solvent was a water-alcohol liquid containing 2.44 per cent. potassium acetate, 16.75 per cent. alcohol, 52.46 per cent. cane sugar and vegetable matter resembling mint, cardamom and boneset. From the claims which were made one would get the impression that there could be few ills that it would not cure (Jour. A. M. A., Nov. 4, 1916, p. 1385-6).

More Misbranded Nostrums.—The following "patent medicines" have been found misbranded under the U. S. Food and Drugs Act, chiefly because of unwarranted and false therapeutic claims: Dr. Jones' Liniment was recommended for corns, toothache, backache, "rheumatism," and various other conditions. Analysis showed it to be "essentially a gasolene solution of oleoresin of capsicum, oil of sassafras, methyl salicylate, and evidently, volatile oil of mustard." Graham's Dyspepsia and Heartburn Remedy was found to contain, among other things, sodium bromide, sodium bicarbonate, magnesium carbonate, sugar, chloroform, alcohol and small quantities of morphine. It was asserted to be a remedy for gastritis, ulceration or threatened cancer of the stomach, and all disorders arising from an impaired digestive system. Mother Hart's Baby Syrup admittedly contained opium and alcohol. It was asserted to be "A Safe Remedy for the Home." Dr. Hale's Household Ointment was sold as "A Positive Specific for the Speedy and Permanent Cure of Rheumatism, Lame Back, Neuralgia," and many other conditions. Analysis showed the ointment to be composed of "vaseline and camphor with a small amount of aromatics resembling oil of thyme." Dr. Greene's Nervura was sold for nervousness, nervous debility, weakness, poor blood, etc. It was found to contain 18 per cent. of alcohol, and celery, ginger and other unidentified vegetable material were indicated. Hill's Freckle Lotion was claimed to be absolutely harmless when used externally according to directions. Yet it was found to contain corrosive sublimate. Dr. Hiatt's Germicide was sold as a specific for croup and for diphtheria, quinsy, sore throat, etc. It was a syrup containing sodium benzoate, phenol, alcohol, a small amount of glycerine, probably balsam of tolu and flavored with oil of wintergreen (Jour. A. M. A., Nov. 25, 1916, pp. 1615 to 1616).

DEPARTMENT OF BACTERIOLOGY AND PATHOLOGY.

(Edited by Benjamin Jablons, M. D., San Francisco.)

[This department has as its chief object the dissemination of the special knowledge that is being developed in the scientific laboratories of the world, and which are of practical interest to the medical practitioner. Abstracts of general articles will be published from time to time as well as preliminary reports of subjects that are of universal interest.]

Journal of Experimental Medicine, December, 1916.

The Comparative Resistance of Bacteria and Human Tissue Cells to Certain Common Antiseptics.

R. A. Lambert concludes that iodine is the only antiseptic of those most comonly employed that lends itself to the disinfection of fixed and wandering tissue cells. He has proven by means of tissue cultures that had been infected with the Staphylococcus that it has a higher toxic action on the bacteria than on the cells. It has the disadvantage, however, of digesting fibrin, a quality it has in common with Dakin's solution which makes its use somewhat inadvisable where the healing of wounds is a factor. Alcohol is antiseptic only in a dilution of 50%, lower dilutions being entirely ineffective. Human cells have been kept in a 5 to 10% solution of alcohol for one hour without showing any ill effects from this exposure.

British Medical Journal, September 16, 1916. No. 2907.

Gas Gangrene as Seen at the Casualty Clearing Stations. Cuthbert Wallace, p. 381.

Cuthbert Wallace discusses the views advanced by Taylor and d'Este Emery's with regard to the etiology and pathology of Gas Gangrene. According to Taylor it is the mechanical action of the pressure of the gas produced in the tissues which produces the vicious process. The resulting anemia and the mechanical fragmentation of the muscle substances and the mechanical scattering of the infection are the actual underlying features. D'Este differs with this view and believes that bacterial toxins are the important features. Taylor's experiments would indicate that the toxemia does not have an effect on the muscles sufficiently extensive to produce the condition as it is seen clinically. Wallace cites eleven cases, two of which had been reported previously by Mullaly and McNee in the Lancet of April 1, 1915, and arrives at the following conclusions. Of the cases reported, cultures had been made in two, and in three other cases histologic sections of the tissues were studied.

1. His impression is that Gas Gangrene rarely occurs without a muscle injury.
2. That it is chiefly a disease of the muscles, and he explains its pathogenicity on the basis of the medium in which it is grown.
3. The lesion is a longitudinal one extending in either direction along the track of the wounded muscle.
4. The muscles of the limbs are involved only when the entire blood supply has been cut off.
5. The first muscles affected are those that have been wounded. If the pressure caused by the disease is relieved, the Gangrene will be confined only to these muscles.
6. If the pressure is not removed other muscles may have their blood supply checked and thus become infected in turn. Those muscles contained in rigid compartments such as the Anterior Tibial group are especially prone to die if wounded.
7. In amputated stumps it is not uncommon to see one muscle die and become gaseous while the rest of the muscles remain healthy.
8. Infection advances further into the muscles than into the areolar planes.

9. Muscles become resonant from the presence of gas before they become crepitant to the finger.
10. Crepitation is usually a late phenomenon and is due to the escape of gas into the areolar and sub-cutaneous tissue.
11. Vascular lesion in an infected limb is followed by the death of a muscle or muscular group. This death does not occur in an uninfected limb.
12. Conditions of the muscles in an infected limb vary from normal, purple, red and contractile to brown, black or diffluent when all contractility has disappeared.
13. The microscopic appearance of a muscle dead due to occlusion of its blood supply differs from that due to infection.
14. The bacteria are between the muscle fibres and not in them.
15. The gas precedes the bacterial infection.
16. Muscle fibres are separated from one another when dead and muscle infection has taken place.
17. It is often found that normal looking and contractile muscles may be infected. Whether these ultimately die is not known.

He then discusses the effect of the toxine produced by the bacteria and considers that it is not the bacterial exo-toxine which causes constitutional symptoms, but attributes it to the effect of the bacterial toxine or bacteria on the muscle substances which then produce a toxic muscle substance which brings about the constitutional symptoms.

Secondly, he considers the part played by the gas and divides this into two categories, the part it plays within the limb and the part it plays within the muscle. The first condition that occurs is the swelling of the muscle due to the gas within it, and this may be present without crepitation being palpable. When it gets into the areolar tissue it finds its way into the inter-muscular planes and around the blood vessels. Infection of the areolar planes is not sufficient to influence pressure of the limb since the muscle sugar is necessary for the production of gas. Suppuration is a late manifestation of the disease and an examination of the muscles shows that non-crepitant muscles that have undergone "Red Death" show histologic presence of gas, these spaces often being free of leucocytes and bacteria. The path of invasion in an unwounded segment of a limb from which the blood supply has been cut off, is according to Wallace, either along the blood vessels or by means of the circulation. In suggestions for treatment he insists that the circulation should be helped in every way. Tight bandages and tourniquets are pernicious. In large arteries that have been wounded, an attempt should be made to suture instead of ligating the vessel. If this is impossible a Tuffiers tube may be tried. Incision or ablation of the wounded muscles is often sufficient to arrest the disease and stop the infection. Gas gangrene occurring in a segment of a limb distal to the wounded segment means always that the main artery is blocked and amputation of the gangrenous segment is the only course. A limb should not be amputated on account of crepitant skin.

The British Medical Journal, August 5, 1916. No. 2901.

Treatment of Gas Gangrene by Intravenous Injection of Hypo-Chlorus Acid (Eusol).

John Fraser and H. J. Bates reported eight cases of what they consider to have been infection with Gas Gangrene Bacilli, none of which apparently were studied bacteriologically, diagnosis being made entirely on the presence of gas in the tissues with evidence of toxemia. In only one of these it was determined at postmortem that the brain was affected with a gas producing organism. In all of these cases the hypo-chlorus acid was injected intravenously in amounts of 25 to 70 c.c., and of these, four were improved. They suggest that this improvement was due to a neutralization of the toxines of the Gas Gangrene Bacilli.

Comptes Rendus De La Societe De Biologie, Tome LXXIX, No. 12.

Weinberg in a previous communication called attention to an anerobe which was encountered in several cases of gas gangrene. This organism which he termed B. Fallax is found as frequently in wounds as is the Vibrion Septique and has highly pathogenic qualities. In four cases of 125 in whom the bacterial flora were studied the B. Fallax was found associated with the varieties of anerobes which are known to-day to be responsible for the production of Gas Gangrene. In one case it was associated with the Bacillus of edema and the Vibrion Septique. In the second it was associated with the B. perfringens. In the third case it was associated with B. perfringens and the B. sporogenes. In the fourth case it was found associated with the three previously mentioned varieties and what was especially of interest was that the patient succumbed after a slight improvement following the administration of sèra prepared against the B. perfringens, the B. oedematis and the Vibrion Septique. He concludes that this organism is highly pathogenic and should be combated when present in cases of Gas Gangrene.

Surgery, Gynecology, and Obstetrics, September, 1916—Precancerous Changes in the Uterus.

W. S. Stone concludes as a result of a review of the literature and the examination of numerous specimens that all malignant changes observed in the uterus have their prototypes in benign lesions occurring at various times previous to their malignant degeneration. While he does not assume that all benign lesions develop into cancer, he maintains that there is a definite sequence between both and suggests that these lesions be considered precancerous and be treated as such.

NEW MEMBERS.

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Rolph, Wm. Donald, Riverside.
Smith, Larz. A., San Francisco.
De Lucis, Car. A., San Francisco.
Gilchrist, Colin, National City.
Churchill, Jas. F., San Diego.
De Puy, Clarence A., Oakland.
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Gates, M. G., Ocean Park.
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Gilmer, John P., Los Angeles.
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Taggart, T. E., Los Angeles.
Elmer, C. J., Los Angeles.
Gerson, T. Percival, Los Angeles.
McDaniel, John L., Los Angeles.
Franklin, James W., Chile, South America.
Wharton, Chas. G., Los Angeles.
Lynch, Jere Geo., Los Angeles.
Hoffman, R. Ora, San Diego.

DEATHS.

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Dunn, John T., Pasadena.
Martinez, Lolita B., San Francisco.
Cohn, Isadore E., Oakland.
Irvine, Lloyd E., San Francisco.
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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. XV FEBRUARY, 1917 No. 2

EDITORIALS

NOTICE.

The April meeting of the Medical Society of the State of California takes place in April, 17, 18 and 19, at Coronado. A tentative program is found in the present issue of the JOURNAL.

We anticipate a most successful meeting. The location is ideal.

The modes of transit is either by water or rail.

We urge upon the members attendance, and beg to call attention to the usual arrangement of one and one-third fare for round trip by Southern Pacific railroad, provided fifty or more purchase transportation. Remember, in purchasing ticket, to notify the agent, and also have your ticket signed at the meeting by the secretary.

The committee at San Diego are bending every effort to offer at the meeting the best accommodations and diversion to all.

It is good practise to secure reservations at an early date.

CORONADO MEETING, APRIL 17, 18, 19.

Railroad rates. Pay your full fare going and get a receipt-certificate from the ticket agent. Have this signed by the Secretary at Coronado and present it to the ticket agent at Coronado when you are leaving; he will issue you a return ticket for one-third fare. Round trip, therefore, is one and one-third the regular fare.

DO NOT FORGET to ask for and receive a receipt-certificate when you buy your going ticket. Failure to do so cannot be rectified.

TIME FOR LEAVING TO ATTEND STATE MEETING AT CORONADO, APRIL 17, 18, 19.

Suggested Day Trip.

Lv.	San Francisco....	8:00 a. m.	Via	So. Pacific
Ar.	Los Angeles....	9:59 p. m.	Via	So. Pacific
Lv.	Los Angeles.....	11:59 p. m.	Via	Santa Fe
Ar.	San Diego.....	5:30 a. m.	Via	Santa Fe

Suggested Night Trip.

Lv.	San Francisco....	8:00 p. m.	Via	So. Pacific
Ar.	Los Angeles.....	9:45 a. m.	Via	So. Pacific
Lv.	Los Angeles.....	3:00 p. m.	Via	Santa Fe
Ar.	San Diego.....	6:30 p. m.	Via	Santa Fe

Or

Lv.	San Francisco....	5:00 p. m.	Via	So. Pacific
Ar.	Los Angeles.....	7:45 a. m.	Via	So. Pacific
Lv.	Los Angeles.....	9:10 a. m.	Via	Santa Fe
Ar.	San Diego.....	12:50 p. m.	Via	Santa Fe

ANNOUNCEMENT.

At its January meeting, the Council appointed Dr. C. G. Kenyon as temporary secretary of the Society, and placed the JOURNAL in the hands of the Publication Committee, one of the members of this committee, Dr. Sol. Hyman, to act as editor. At the annual meeting in April, the House of Delegates will elect a permanent secretary and the Council will appoint a permanent editor.

"COMMON COLDS."

This is the season for infections of the upper respiratory tract. How often "just a cold" is neglected and develops into something very serious and frequently "just a cold in the head" is passed on to some one who is less able to fight it, perhaps an already sick person! Many of us had come to think that pneumonia was not a contagious disease, but everything in epidemiology points to the fact that most of the upper respiratory tract infections are contagious. The latest scientific researches seem to indicate very strongly that pneumonia is not only contagious but that the pneumococci ordinarily found in our throats are not the type that produce the most virulent pneumonia. According to the classification adopted at the Rockefeller Rospital the pneumococci are divided into four groups, Group IV being those ordinarily found in about 20% of apparently normal individuals, whereas Groups I, II and III produce the most virulent types of pneumonia. It has been possible to trace these organisms from one individual to another. This is especially true of those who are caring for pneumonic cases. Of course an individual with an acute cold or an inflamed throat is one with a more or less lowered resistance and just the one to develop a pneumonic infection. We frequently advise our patients, especially children, to keep away from individuals who have colds, but how often do we feel it incumbent upon ourselves to stay away from our patients, especially children, when we have acute colds? In epidemiology unfortunately there is no special exemption for the doctor.

THE MALPRACTICE INDEMNITY FUND.

Over three hundred members having sent in their subscriptions, the Malpractise Indemnity Fund became operative on December 7, 1916. Contributing members, and contributing members only, are entitled to its benefit and protection on claims made against them arising out of and originating from professional services rendered by them on and after December 7, 1916.

No doubt, now that the plan is in operation, and that the State Society not only defends its members, but stands ready to assume the burden of settling all claims, subscribers to the Fund will rapidly increase in number. For their benefit, we must state that no contributing members shall be entitled to its protection as to claims arising from services rendered prior to the receipt by the Society of their subscription to the Fund.

Remember! Malpractise Defense is separate from the Indemnity Fund. Membership in the latter is purely voluntary. But members so protected need no other insurance. The last argument for carrying protection other than that afforded by the State Society has been nullified.

MEDICAL EDUCATION BY NEWSPAPERS.

The unfortunate death of a child in San Francisco, almost immediately following a prophylactic dose of diphtheria antitoxin, has caused much discussion in the lay press and among the people at large. The autopsy revealed a marked status lymphaticus, so that it is evident that the death is in nowise chargeable to the antitoxin, but to the shock of its administration, which the child was unable to resist.

We extend to the press our unstinted praise for its sincere exposition of the facts and for the incalculable value it has been in helping properly to educate the public to interpret the findings; and to make clear that this deplorable incident should not jeopardize the lives of other children by restriction in the use of the antitoxin as a prophylactic in the case of those exposed to diphtheria.

This is the kind of medical education the public needs and should have. Let it be encouraged!

THE MEDICAL PRACTICE ACT.

The present law regulating the practise of medicine divides all practitioners into two classes: "physicians and surgeons" and "drugless practitioners," and avoids any reference to sects or cults. It outlines very definitely the scope of practise for the two classes. Physicians and surgeons are authorized "to use drugs or what are known as medicinal preparations in or upon human beings and to use any and all other methods in the treatment of diseases, injuries, deformities, or other physical or mental conditions." Drugless practitioners are authorized to practise "without the use of drugs or what are known as medicinal preparations and without *in any manner severing or penetrating any of the tissues of human beings except the severing of the umbilical cord.*" Reasonable educational requirements are demanded of applicants for either class of license and they must also present diplomas from schools *approved by the Board,* and certificates of good moral character. This "approved by the Board" clause in the law is a most important feature, for it subjects all medical teaching institutions to frequent inspections by the Board, thus compelling them to do good work. Already several institutions unable to meet the Board's demands for radical improvements have "gone out of business." The value of this feature of the law cannot be over-estimated. The present Medical Practise Act has many other good features and, although it has some defects, it would be extremely undesirable to see it weakened in any way. Get in touch at once with your senators and assemblymen and make them realize that the regular medical profession demands that standards be *not lowered.*

Elsewhere in the JOURNAL appears a complete list of the members of the California legislature arranged by districts for your information. If any of these men are your patients write to them at once!

A CRYING NEED—A STATE PSYCHOPATHIC HOSPITAL.

At last it looks as if the people of the state of California have been aroused to the point of doing something big and sensible in the matter of removing the disgrace attending the methods of examination and commitment of the insane and the prevention of mental diseases in general. The state has excellent hospitals for the insane, which unfortunately are filled to overflowing, and nothing is being done upon the broad scientific scale that the situation demands, to prevent insanity nor to inquire why California has so much more of it than other states. Our medical schools are without facilities for teaching mental diseases,—most medical students in California graduate without ever having seen an insane patient. Johns Hopkins, Harvard Medical School and the University of Michigan have research psychopathic hospitals which act as clearing houses for the insane for their respective states, and in Michigan under the direction of the professor in charge of the psychopathic hospital of the University there have sprung up throughout the state numerous psychopathic clinics which provide treatment and care for many cases which should never enter an insane asylum. The number of insane in asylums has been reduced 25%; the insanity commissioners throughout the state receive the skilled assistance of the staff of the psychopathic hospital in coping with their problems; the police departments receive assistance in dealing with drug habitues and the criminal insane; the medical profession of Michigan have near at hand a place where they may receive excellent post-graduate courses in mental diseases and something is being done to prevent mental wrecks in the next generation as well as giving better care to those already lost.

Now comes the California State Board of Health with a bill in the present state legislature asking for half a million dollars for the establishment of a psychopathic hospital as a part of the

medical school of the University of California. The State Board of Health feels that it is wrong to continue doing nothing more than inflicting a jail sentence upon drug habitues and chronic alcoholics, and it feels that the methods in vogue for the examination of insane patients would be out of date in the dark ages; it feels that to expect insanity commissioners to make a diagnosis of their patients in from one to three days is unreasonable; it feels that the fact that there are no hospitals where mental patients can be sent for observation without having them first committed as insane is neglectful; it feels that to arrest a person and put him in a dirty cell in a country jail and to handcuff him to an iron cot there to wait as many days as may be necessary for the local examiner of lunacy to send him to a state insane hospitals is barbarous and not in accord with the desires of our people. The State Board of Health has quietly but systematically been studying this problem for over a year and the California State Journal of Medicine feels that the establishment of a research psychopathic hospital under the Board of Regents of the University of California would go very far toward the solution of the problem. The JOURNAL also urges that each of its readers write or telegraph to his respective representative in the state legislature, to the Governor, the Lieutenant-Governor and the president of the Board of Control urging the establishment of this hospital.

THE MEDICAL ASPECT OF COUNTY JAILS.

An interesting survey of the county jails of California has just been published by the State Board of Charities and Corrections. After perusing this report we wonder how many physicians are really in touch with the sanitary conditions of their county jails. Among the bad conditions found by the Board were overcrowding, lack of heating facilities, no towels, toilets out of repair, dark and dirty cells, insanitary beds and the insane were kept in 23 county jails. One feels that most of this arraignment deals with problems of health and sanitation which really reflect on the interest the medical profession takes in these quasi-medical institutions. With the rapid growth of interest in state medicine it would be not only of material assistance to the various counties but also of considerable advantage to physicians if they kept themselves in touch with these institutions. The problems of health and sanitation are always important and the public is more and more coming to hold itself responsible for the solution of these problems through trained sanitarians. Unless the medical profession takes an active interest in these matters our opinion will not even be sought when such positions are to be filled. Of course this problem of the county jail is far deeper than simply one of insanitary conditions in existence at the present time. As brought out by the report these institutions are breeding places for vice and crime and the State Board of Charities and Corrections very properly recommends that, as most of the misdemeanors are state offenses the state should create an institution for the care of these cases, making the county jails merely places for the temporary detention of prisoners awaiting trial and not places where sentences should be served. When we remember that a large percentage of these individuals are alcoholics and drug habitues the necessity for creating an institution or farm for their treatment rather than for their punishment is apparent. The problem takes on a very definite medical aspect. A number of states have already realized the advisability of creating such farms, notably Massachusetts, where they have been developed on a very remarkable scale. Their reports are most encouraging for the outcome of many of these cases. Now is the time to interest our California legislature in the passage of a bill for this purpose. Its need should be impressed on local representatives.

TRAUMA AND ITS SEQUELS.

The longer Accident Insurance is in effect the more apparent do its benefits become, not only its social benefits but its scientific ones. Anything that will conduce to accurate examination and the keeping of accurate records cannot fail to further that most difficult branch of medicine—the science and art of clinical observation.

The relation of trauma to certain forms of sarcoma, notably the so-called giant-cell sarcoma of the bones, has long been discussed and the opinion that these tumors are not sarcomas at all, but rather the sequels of an irritation of the cells of the marrow and of an inflammatory nature, has become more and more prevalent. Absolute proof, however, has been wanting. Patients presented themselves at a greater or lesser interval after a bone trauma with a swelling which at operation turned out to be this giant-cell "sarcoma," but in the absence of X-ray plates taken immediately after injury the question usually remained open whether the tumor was not present previous to the injury, and whether instead of the fracture being the cause of the tumor, the tumor was not the cause of the fracture, having previously so weakened the bone that a slight injury had sufficed to break it. Convincing cases—i. e., those having had X-ray plates taken immediately following the injury showing a bone intact except for the fracture and free of all suspicion of tumor, and with later X-ray plates showing a "sarcoma" developing at the site of injury—were rare. Such clear evidence of traumatic tumor formation is, however, multiplying under the provisions of the Accident Commission that demand early X-rays. This is but one instance of the many excellent opportunities for shedding light on obscure clinical problems that the Act affords; the relation of trauma to hernia, trauma to tuberculosis, the relation of syphilis to the healing of fractures, are others which observations made on patients treated under the Act are helping to solve. If Sickness Insurance becomes a fact we may expect more valuable information from periodical health examinations and from detailed State records.

HUMOR IN DIETS.

There is a little paper published in Kansas City called the *Weekly Unity* that goes Christian Science several better. We give a few extracts from an article on diet; any comment would spoil it:

"Now dear friend, you are no doubt wondering what might be considered a proper diet. Let us choose according to the human requirements.

"First of all we strike flesh, fish and game from the fare. These foods are but carrion. Carnivorous animals were so created and designed to clean the stinking corpses of decaying bodies from the face of the earth in order that the pure air and clear waters might not be polluted. You will find that nearly every carnivorous animal is immune from infection through the alimentary tract.

"Thus we have discovered that *man is not a carnivorous animal.*

. . . . . .

"You ask for a balanced diet for the day? Well, here goes:

BREAKFAST.

"Good morning (smiling on the face).

LUNCH.

"Some substantial soup (vegetable, bean, pea, etc.), a simple cereal or vegetable (unpolished rice, cracked wheat, whole barley, cracked oats, baked potatoes, baked sweet potatoes, hominy, corn bread, or baked beans), with maple syrup or honey.

"Some mild vegetable (spinach or greens, green beans, peas or asparagus); a non-acid salad (raw cabbage, carrots, cress, celery or lettuce, etc.), olive oil dressing.

"Dessert—A big juicy prune or two.

"Drink—Adam's ale, hot or cold.

DINNER.

"Some fresh fruit (only one kind at a meal); a few raisins, figs or dates; a few nut meats (not peanuts."

. . . . . .

This is all very funny, but when a mother tries this diet on a poor little girl with tuberculosis glands, a little child who can't protest, then * * * we are constrained to incline towards Emma Goldman.

THE LEGISLATURE IN SESSION.

From now until the end of January the State Legislature will be in session for the purpose of having bills presented. In February a recess will be taken during which time the various bills are supposed to be studied. A few weeks after the Legislature will reconvene for the purpose of voting on the measures proposed. During this latter half of the period no new bills can be presented without the consent of the Legislature.

Several bills of vital interest to the medical profession are now under consideration and the number will increase. In the March issue of the JOURNAL they will be discussed. The object of all of them is to let down the bars so that half-baked "graduates" of freak "schools" can qualify for licenses. As stated before in these columns the problem is purely an educational one. New sects or cults are created to provide short cuts to the practice of medicine for individuals who cannot possibly go through a modern regular medical school,—and then attempts are made to bring about special legislation on behalf of these so-called "schools of practice." This year several groups of "drugless healers" are trying to have the law changed so they can acquire licenses easily. Once a license is obtained to practice any so-called "system," the holder almost invariably reaches out for all kinds of work. Now that industrial accident work has become so important, and health insurance is on the way, these untrained would-be "doctors" are most anxious to have it made easier to obtain licenses. At least four bills designed to do away with the present Act are now under way. One of them proposes to place the entire matter in the hands of laymen. Two other bills make liberal provisions for different "drugless" factions. Still another bill gives special privileges to the chiropractors. And there will be several more. As it is possible under certain conditions for a bill to be rushed through it is incumbent upon every member to keep in touch with the situation. Those clamoring for the lowering of legal requirements naturally associate themselves with political organizations. Once having developed political backing they work hard and sometimes successfully, for special legislation on behalf of their freak sects or cults. Much is said about the "rights" of these would-be doctors and strong demands are made that something be done in the direction of making it possible for them to obtain licenses without having to submit to the usual educational tests. But how about the long-suffering public? Have they no rights? How about the helpless sick? Have they not the right to demand that only educated and properly trained doctors are provided for them? Will any one deny that as long as a practitioner is honest, has a good basic education and at least four years of work in a completely equipped, modern medical school, followed by a year of actual hospital experience that it matters little what therapeutic methods he may profess to practise?

The membership of the California State Medical Society is large enough and the influence of its members surely is great enough to impress upon the legislature the necessity of maintaining educational standards in medicine. Write to your senators and assemblymen *now*, and ask them to advise you the moment any legislation is presented affecting the medical profession.

The legislature has no desire to lower standards, but naturally is impressed when large numbers of messages and letters come in on behalf of any measure.

What is needed most at the present time is some active agent on the field to keep in touch with the situation. A few hundred dollars contributed by the State Society or by members individually could at this time secure the services of an able and influential legal representative, who is not a member of the legislature and does not hold a public position, but could amply protect the best interests of the public and the medical profession. What do you think about it?

SPECIAL LEGISLATION FOR OSTEOPATHS

Word has just been received that the osteopaths' political organization is introducing an amendment giving to all of their members heretofore licensed exactly the same standing as "physicians and surgeons." Notify your representative in Sacramento that we demand that the law be not amended! The Legislature adjourned January 26th to reconvene February 26th, when various bills will be voted upon.

MOST IMPORTANT TO YOU!

Do Not Let Your Dues Become Delinquent!

If You Do, You Lose the Legal Protection of the State Society

Pay Your Dues Early and Don't Take Chances

MEMBERS OF THE CALIFORNIA LEGISLATURE—42ND SESSION, 1917.

SENATORS.

Name	Party	Dist.	County	Address
Ballard, John W.	(R)	38	Los Angeles	1426 S. Union Ave., L. A.
		34	Los Angeles	
Benson, Frank H.	(R P)	27	Santa Clara	702 E. Santa Clara, S. J.
Breed, A. H.	(R P D)	15	Alameda	130 King Ave., Piedmont
*Brown, William E.	(R P D Ph)	37	Los Angeles	745 Whittier, L. A.
Burnett, Lester G.	(R)	19	San Francisco	1922 Broadway, S. F.
*Canepa, Victor J.	(Ind)	18	San Francisco	454 Union Street, S. F.
*Carr, Frank M.	(R)	13	Alameda	4410 Evans Ave., Oakland
Carr, Wm. J.	(P)	36	Los Angeles	44 S. Euclid Ave., Pasadena
*Chamberlin, Harry A.	(R)	31	Los Angeles	1501 W. 48th, Los Angeles
Chandler, W. F.	(P R)	26	Fresno	Fresno
*Crowley, John Jos.	(P D)	22	San Francisco	692 Valencia, S. F.
Duncan, W. E., Jr.	(D P S)	6	Butte	Oroville
Evans, S. C.	(R Ph)	39	Riverside	675 8th St., Riverside
Flaherty, Lawrence J.	(R P)	24	San Francisco	7 Delano, S. F.
Gates, Egbert J.	(R D)	35	Los Angeles	1120 Buena Vista, South Pasadena
Hans, George J.	(R)	14	Alameda	3243 Farnum, Oakland
Ingram, Thomas	(R D)	3	Nevada	332 E. Main St., Grass Valley
Inman, J. M.	(R D P)	7	Sacramento	700 30th St., Sacramento
Irwin, J. L. C.	(D)	32	Kings	Hanford
Johnson, M. B.	(R D)	11	San Mateo	Montara
Jones, Herbert C.	(P R D Ph)	28	Santa Clara	San Jose
*Kehoe, William	(R P Ph)	1	Humboldt	316 Trinity St., Eureka
King, Lyman M.	(R P)	30	San Bernardino	Redlands
*Luce, Edgar A.	(P D)	40	San Diego	San Diego
*Lyon, Henry H.	(R D)	29	Los Angeles	950 Stanford Ave., L. A.
McDonald, Walter A.	(R P D)	23	San Francisco	503 Minnesota St., S. F.
Maddux, L. J.	(D)	12	Stanislaus	Modesto
Nealon, James C.	(D)	21	San Francisco	960 Haight St., S. F.
Purkitt, Claude F.	(D R Ph)	4	Glenn	Willows
Rigdon, E. S.	(D S Ph)	17	San Luis Obispo	Cambria
Rominger, Joseph A.	(R)	33	Los Angeles	1213 Cedar Ave., Long Beach
Rush, Benj. F.	(R)	5	Solano	Morgan St., Suisun
Scott, Wm. S.	(P R)	20	San Francisco	427 9th Ave., S. F.
Sharkey, Will R.	(R)	9	Contra Costa	Martinez
Shearer, Wm. B.	(D)	2	Siskiyou	Yreka
Slater, Herbert W.	(D P S)	8	Sonoma	Santa Rosa
*Stuckenbruck, J. W.	(D)	10	San Joaquin	Lodi
Thompson, J. R.	(D)	25	Santa Barbara	221 W. Victoria St., Santa Barbara
Tyrrell, Edward J.	(P R)	16	Alameda	1002 Filbert St., Oakland

(D—Democratic. R—Republican. P—Progressive. Ph—Prohibition. S—Socialist. Ind—Independent.)
*—Member of Committee in charge of medical laws.

ASSEMBLYMEN.

Name	Party	Dist.	County	Address
Allen, Crombie	(R Ph)	57	San Bernardino	311 W. H St., Ontario
Ambrose, Thomas L.	(R P Ph)	66	Los Angeles	1814 Pennsylvania, L. A.
Anderson, Frank W.	(R)	39	Alameda	1103 Adeline, Oakland
Argabrite, Joseph M.	(D)	60	Ventura	332 Laurel St., Ventura
*Arnerich, Paul J.	(R)	35	Alameda	1318 Caroline St., Alameda
Ashley, Geo. W.	(R)	19	San Joaquin	Lodi
Baker, Edwin	(R)	75	Los Angeles	240 W. 27th St., L. A.
Baldwin, Hugh J.	(R)	79	San Diego	821 17th St., San Diego
Bartlett, Alfred L.	(R)	63	Los Angeles	1647 Sierra Bonita Ave., L. A.
Brackett, W. R.	(Ind)	38	Alameda	594 9th St., Oakland
Brown, C. H.	(R S)	7	Butte	Gridley
*Brown, T. V.	(R)	44	Santa Clara	284 W. Santa Clara, S. J.
Bruck, Bismarck	(R)	11	Napa	St. Helena
Burke, Joe C.	(R)	76	Orange	401 S. Ross St., Santa Ana
Byrne, Henry D.	(R)	32	San Francisco	920 Post St., S. F.
*Calahan, William E.	(R P)	18	Contra Costa	615 2d St., Antioch
Carlson, A. W.	(R)	50	Fresno	Oleander
Collins, William M.	(R D)	24	San Francisco	268 Day St., S. F.
Dennett, Lewis L.	(R)	46	Stanislaus	821 13th St., Modesto
Doran, W. A.	(R)	80	San Diego	San Marcos
*Edwards, Lawrence	(D P)	20	San Joaquin	815 W. Magnolia, Stockton
Eksward, Frank Leonard	(D)	42	San Mateo	314 Ellsworth, San Mateo
Farmer, Bert L.	(R)	71	Los Angeles	205 W. 59th Place, L. A.
*Finley, T. R.	(D)	59	Santa Barbara	Santa Maria
Friedman, Leo R.	(R)	33	San Francisco	352 Geary St., S. F.
*Gebhart, Lee	(R P D)	15	Sacramento	West Curtis Oaks
Gelder, George	(R)	40	Alameda	1640 Berkeley Way, Berkeley
*Godsil, Charles Wm.	(R P D)	25	San Francisco	2929 Harrison St., S. F.
Goetting, Charles W.	(R)	28	San Francisco	2883 Golden Gate, S. F.
Green, Lyman	(R)	12	Sonoma	18 7th St., Petaluma
Greene, Carlton W.	(R D)	53	San Luis Obispo	Paso Robles
Harris, Witten W.	(D)	56	Kern	1215 I St., Bakersfield
Hawes, Frederick C.	(R P D)	21	San Francisco	252 6th St., S. F.
Hawson, Henry	(D)	51	Fresno	2315 Hills St., Fresno
Hayes, D. R.	(R)	45	Santa Clara	177 N. 10th St., San Jose
Hayes, J. J.	(R)	26	San Francisco	4120 22d St., S. F.
Hilton, Oscar W.	(R D)	10	Solano	717 Alameda St., Vallejo
Horbach, Robert	(R)	55	Tulare	903 Sunnyside Ave., Porterville
Hudson, R. H.	(R D)	43	Santa Cruz	453 E. 3d St., Watsonville
Johnson, A. Burlingame	(R)	67	Los Angeles	622 S. Los Robles, Pasadena
Johnston, John W.	(R)	14	Sacramento	North Sacramento
Kline, Chester M.	(R)	77	Riverside	San Jacinto
Knight, Samuel	(R Ph)	58	San Bernardino	Judson St., Redlands
*Kylberg, H.	(R)	49	Merced	731 Canal St., Merced
Long, W. A.	(R)	54	Kings	606 N. Irving St., Hanford
Lyon, Chas. W.	(R)	62	Los Angeles	700 Victoria Ave., Venice
*Lyons, Harry	(R P)	64	Los Angeles	317 N. Boylston St., L. A.
McCray, C. C.	(R)	3	Shasta	226 Pine St., Redding
Madison, Robert	(R)	13	Sonoma	1249 Morgan St., Santa Rosa
Manning, J. E.	(R)	17	Marin	San Anselmo
Marks, Milton	(R)	31	San Francisco	1958 Lyon St., S. F.
Martin, William J.	(R D P)	48	Monterey	130 Central Ave., Salinas
Mathews, A. J.	(R)	4	Lassen	Susanville
Merriam, Frank F.	(R)	70	Los Angeles	503 E. 7th St., Long Beach
Mitchell, Thomas A.	(R D)	22	San Francisco	1370 Utah St., S. F.
Morris, Clarence W.	(R)	30	San Francisco	1050 Divisadero St., S. F.
Morrison, Harry F.	(R D)	29	San Francisco	111 Webster St., S. F.
Mouser, Frank H.	(R D P)	74	Los Angeles	826 E. 7th St., L. A.
Parker, Ivan H.	(R D P)	9	Placer	298 Commercial St., Auburn
Pettis, J. A.	(R)	6	Mendocino	Fort Bragg
Pettit, Melvin	(P D Ph)	52	Fresno	Parlier
Phillips, Peter C.	(R D)	65	Los Angeles	981 N. Broadway, L. A.
Polsley, Harry	(R D S)	5	Tehama	1037 Johnson St., Red Bluff
Prendergast, N. J.	(R D P)	27	San Francisco	1648 8th Ave., S. F.
Quinn, John F.	(D)	2	Humboldt	307 Harris St., Eureka
Ream, H. B.	(D)	1	Siskiyou	Sisson
Rose, J. Leonard	(R D)	34	Alameda	Newark
Ryan, James J.	(R P D)	23	San Francisco	3252 Harrison St., S. F.
Satterwhite, William T.	(R P)	37	Alameda	286 Santa Clara Ave., Oakland
Shepherd, E. R.	(R)	68	Los Angeles	805 W. Hadley St., Whittier
Smith, Frank M.	(R)	36	Alameda	1929 24th Ave., Oakland
Tarke, Louis	(R)	8	Sutter	West Butte
Vicini, C. P.	(D)	16	Amador	123 Court St., Jackson
Watson, George C.	(R)	72	Los Angeles	1619 W. Adams St., L. A.
Williams, Dan E.	(R)	47	Tuolumne	Chinese Camp
Wills, Robert E.	(R D)	78	Imperial	Brawley
Wishard, Harry A.	(R P)	61	Los Angeles	5336 Abbott Place, L. A.
Wright, Henry W.	(R P D)	69	Los Angeles	1009 Fair Oaks Ave., South Pasadena
Yonkin, Henry H.	(R P)	73	Los Angeles	434 E. Adams St., L. A.
Young, C. C.	(R P)	41	Alameda	2729 Derby St., Berkeley

ANTI-VIVISECTION.

The passage of a bill that would have practically prevented animal experimentation within the state at the last meeting of the Legislature was a great shock to those who have been most interested in the development of medicine here in the last few years. The failure of the legislators representing the cities where there has been the greatest medical progress to understand or appreciate the value of their own medical institutions was also disturbing. The conference held before the governor of the State, which led to his veto of the bill, again emphasized the great ignorance on the part of the public as to medical questions. This ignorance exists also in the medical profession. Many physicians, even members of the Legislature, are not fully familiar with the requirements of medical investigation.

In order to prepare for the very evident danger from anti-vivisectionists and various other antis, to scientific growth in California, the Society for the Promotion of Medical Research was organized, its main purpose being to prevent legislation that would interfere with research on the one hand, and to stimulate research on the other. The whole plan of the society is to disseminate the truth in regard to medical research as widely as possible. It is of vital importance that the medical profession take a deep and personal interest in this matter. The attention of assemblymen and senators should be promptly called to legislation that in any way appertains to the subject. The society will be glad to co-operate in supplying information to physicians in regard to impending legislation.

It is proposed in the coming Legislature to meet the issue squarely as far as animal experimentation is concerned. The present laws in regard to cruelty to animals are very drastic and permit any abuse to be promptly corrected. Under these conditions it is thought that a law definitely arranging for animals from the pound to be used for experimental purposes is legitimate and most desirable and would be welcomed by the great majority of the people in the state. Dr. Whipple, of the Hooper Institute for Medical Research, has, with the aid of Judge Graupner and Dean Ophuls, carefully considered this whole problem and their conclusions can be relied upon by the medical profession. It is the hope of the society that every physician in California will take a personal interest in this matter at the present time. If it is settled right, it will have a profound influence for the future here and in other states. Although there have been many attempts made, no legislation has been passed in any one of the United States for the prevention of experimental work required for the advancement of medical science. California cannot afford to be sponsor for any such backward step and can be a leader in frankly meeting the needs of progressive medicine.

RAY LYMAN WILBUR.

ORIGINAL ARTICLES

SOCIAL INSURANCE.*

BY MORTON RAYMOND GIBBONS, M. D.
San Francisco.

To the Members of the Los Angeles County Medical Society:

Your officers have asked me to address you on the subject of "Medical Service under Social Insurance."

I will take some liberties with my subject. I propose to tell you of my impressions gained from observations in industrial accident work,—to make some comment upon the subject of "Health Insurance,"—and give an outline of a plan for medical service under Health Insurance, which I think would be practical.

I will commence with a discussion of the medical problems of the Industrial Accident Insurance Commission and the State Compensation Insurance Fund.

It will be apparent that the interests of the Industrial Accident Commission and the State Compensation Insurance Fund lie parallel to a large extent. The Commission feels that the Workmen's Compensation, Insurance and Safety Act places an obligation on it which is not specifically defined in the text of the law. That is, it feels responsible for the surgical results to the injured working man coming under its care. It feels that besides scrutinizing results from the standpoint of indemnities deserved, it should scrutinize them from the standpoint of good surgery and surgery which might have been accorded. If you have not already read the oration in surgery of Emmet Rixford, M. D., which is published in the Journal of the American Medical Association, September 30, 1916, you should do so. In this is set forth in a clear and farsighted way the effects of accident insurance on our profession.

The Industrial Accident Commission, when it began to administer the Workmen's Compensation, Insurance and Safety Act, found itself confronted with a problem which was comparatively unknown. There were few Commissions in this country. The laws in existence had less scope than the California law. No Commission had gone very far and all were pioneering. The foreign laws helped little because of differences in the basic principles of government. Our Commission had to make all the Rules of Procedure and establish its own precedents.

A parallel condition existed in the medical affairs of the Commission. Very few men in this country had ever been called upon to meet great responsibility in the question of trauma and its results. The books when they mentioned trauma at all *merely* "mentioned it." They did not give responsible information.

When the Workmen's Compensation, Insurance and Safety Act went into effect the Industrial Accident Commission gathered a group of medical

* This paper was read November 9, 1916, before the Los Angeles County Medical Society, and with slight modification, on November 21, 1916, at the hearing of the Social Insurance Commission held in San Francisco.

men to which the task of advising it in medical subjects has fallen. These men by their studies of the cases, and the needs of the Commission, and by their general familiarity with the work have become most valuable. They themselves would be surprised to learn the change in their point of view in the last three and one-half years, and surprised to realize their greater facility in handling the ordinary run of cases.

However, just because the medical experts are scientific and conscientious men, the Commission is sometimes left in a dilemma. Medical and surgical information is not complete. Little of it is exact science. A given train of events will not necessarily lead to a given issue. Some things may not be stated positively by men who regard their reputations. The Commission sometimes finds a conscientious equivocal statement confronted by a comparatively irresponsible positive statement on a point in which there is not much knowledge any way.

Of course, the Commission must listen to interested parties. Some doctors are not above serving a cause which is not scientific; some are willing to make positive statements without positive knowledge and some seem to forget that they are responsible for their words.

It is in this matter and kindred matters that the group of specialists with which the Commission has surrounded itself is most valuable.

The Commission by referring to its special medical examiners obtains authoritative information from the standpoint of the highest surgical knowledge, and, armed with this knowledge is able to make decisions which are just and accurate in spite of contrary information.

A parallel condition of things applies to the State Compensation Insurance Fund. The Fund has access to exactly the same group of specialists and experts that the Commission has. Just as the experts of the Commission are called upon to scrutinize the results of surgery, good and bad, coming before it, so these experts are called upon to scrutinize and frequently to correct the results of surgery, good and bad, performed for the State Insurance Fund.

The Industrial Accident Commission, has under the law, no authority directly to influence the choice of a surgeon by the employer. The law provides the employer with this authority. The best that the Commission can do when it witnesses results of poor surgery is to invite attention to the fact and to impose upon the employer the penalty of the indemnities due because of loss of function which results. The State Compensation Insurance Fund, on the other hand, by virtue of the contract which the law permits it to make with the employer of the injured man, has the power to select the surgeon.

Because of the public character of the State Compensation Insurance Fund it has never been deemed advisable to make contract with a group of doctors to carry on all of the work of the Fund, although it is recognized that such a course, from the standpoint of efficiency might be the best.

The Fund has accepted the services of the physicians called by the employers and in doing so has experienced practically the same results in costs and in disabilities as have the other Insurance Companies. Some very interesting suggestions come from the study of the experience of the Insurance Companies. The statistics of costs of compensation and the proportion of costs of medical service to indemnity cannot be at all accurately determined until some years after the experience. From the statistics at hand, however, which serve to guide, but do not confirm, it appears that employers who carry their own insurance and who provide their own medical service through contracts with medical men show the lowest medical cost.

The Insurance Companies which are most liberal to the doctors; which allow the greatest latitude in the selection of doctors, experience the greatest medical cost. The Fund does not appear to have found medical service as costly as have several others of the Insurance Companies, which have adopted methods similar to those of the Fund.

It is a notable fact that the proportion of indemnity paid for injury remains practically the same in the experience of more important companies. Of the Insurance Companies which partially, or wholly contract their work, some have experienced high medical costs and high indemnities; above the average. Others have experienced medical costs and indemnities considerably below the average.

In this fact there seems to be some significance, since the character of the medical men appears to play a part. The company with the closest personal scrutiny by its medical chief, and the highest type of medical men to do the work seems to obtain the cheapest and best results.

As indicated above the statistics lead only to impressions. They are incomplete and those dealt with include only the more minor injuries. It is obvious that in the more serious injuries, the better the surgery, the better will be the result, and the cheaper the total costs.

There is a difference between the exactions of medical work and of accident surgical work. Ordinarily in medical work, the emergency is not in the beginning. It does not matter what the treatment is or what the diagnosis is as early as it does in surgical work. Frequently the course of a surgical case is determined by the first treatments. This leads to the thought that to obtain the best surgical results in accident cases, the injured must fall into the hands of a competent surgeon with the least possible delay. Furthermore, it leads to the thought that unless a doctor is qualified to do major surgery he should not attempt to handle a major surgery case except in emergency, and if he is not able to handle major surgery or to perform major surgical operations, he is ill-equipped to make surgical diagnosis, or even recognize major surgical conditions. A minor surgical case frequently develops into a major case. The less skilful the surgeon the more frequently this happens.

On this account the State Compensation In-

surance Fund has planned to put into effect an arrangement substantially as follows:

The well equipped surgeons in all communities will be invited to do the work of the State Compensation Insurance Fund under certain restrictions. That is, they must co-operate in the matter of reports and information furnished the home office of the Fund. They must be willing to keep adequate records for future reference and to cause X-ray examinations to be made in accordance with modern surgical precepts. They must be willing to accept the fee schedule.

It will be seen, then, that in each community there will be a number of physicians appointed to whom those insured in the Fund will be directed to send their injured employees. These doctors will be directly responsible to the State Compensation Insurance Fund.

The character of the medical service rendered the individuals who have been injured determines to a larger extent than would appear on the surface, the length of disability. The question is not only one of recovery from the injury with the least possible deformity. It goes further than this. It involves the restoration to full function which depends often on complex psychic conditions. The function of the surgeon is more than mechanical. He must be the physician and he must be in sympathy with his patient. He must treat him as his mental endowment and his mental attitude requires.

Many of the Insurance Companies have had a great deal of trouble with disabilities resulting from accidents in which the original injury is really not the source of great difficulty. They have had the greatest trouble with traumatic neurosis. They have besides had a great deal of difficulty in restoring to function individuals who will not try to help themselves; who cannot be detached from the idea that mere pain and discomfort are compensable.

It must be the effort of the Industrial Accident physicians to encourage the injured, to allay their fears regarding their rights and their future, and to counteract the effect of the pernicious activity sometimes displayed by well-meaning friends.

The Industrial Accident surgeons should be quick to detect evidences of mental depression. One of the most difficult subjects is the restoration of injured individuals to function when such restoration necessitates the experiencing of pain and discomfort.

The more personal the contact between the doctor and his patient, the more confidence will be established and the better and quicker will be the result.

The same theory applies equally well to the relation between the State Compensation Insurance Fund and its doctors. The establishment of confidence and understanding; the avoidance of bickering and technicalities will produce an ideal situation. The plan which the State Compensation Insurance Fund will adopt involves more medical supervision and more accurate contact and observation of cases than has heretofore been attempted.

Many insurance companies have joined together to contract for medical service. This system should be deplored. It tends to lead, and has led to exactly the situation alluded to above. It has led to dissatisfaction among the injured, to injustice and to misunderstanding. It has led to disability from neurasthenia. Our belief is that such a system is the most important cause of neurasthenia. Such "wholesale" medical treatment is good for neither the doctor, the injured, the Insurance Company, the Workmen's Compensation, Insurance and Safety Act, nor Society. Co-operation of the Commission, Insurance Companies, Employers, Injured Men and the Medical Profession, is the ideal situation.

There is, just now, a great deal of interest in various divergent lines of activity, in the subject of Social and Health Insurance. This subject runs parallel to Industrial Accident Insurance, which is my reason for considering both phases in the same paper. You have knowledge of the Committee of the Medical Society of the State of California devoted to this subject. There are many county units making special studies. Many private groups and clubs are actively interested. It behooves physicians to be conversant with all the phases of this matter. It behooves them to have their minds made up and to be ready to get together. We are some five thousand in this State of two million and more people.

When the accident phase of Social Insurance became a law of California in 1914, the medical profession was caught napping. It should have learned its lesson by this time. It had opinion enough to express after the law was in effect and it found itself left out. The same amount of energy expended before this Social Insurance law is framed will provide and insure a proper place for the profession. However, a word of warning to you,—*Be a Unit.* To be this will require careful guiding.

The osteopaths will be a unit. The Insurance Companies will be a unit. The Labor Unions will be a unit. Only by being a unit yourselves will you get consideration.

I recommend for your careful study Dr. Rubinow's books on Social Insurance,—also "Health Insurance"—Standards and Tentative drafts of an Act of the American Association for Labor Legislation. Also, "Health Insurance"—Public Health Bulletin No. 76, of March, 1916—published by the Treasury Department.

I will state right here that I am in favor of Health Insurance. I am in favor of it if it will not curtail the activities of the doctors; if it will not disturb relation of doctor and patient; if it can be arranged to improve medical facilities and medical standards. I am strongly opposed to it if it brings with it possibilities for contract medicine; if it brings with it the possibility of exploiting the medical profession, and lowering medical standards.

Dr. Rubinow will tell you all about the economic problems involved; the need for Social Insurance and the distribution of the burdens, so my comments on these phases of the subject will be few. We physicians must realize that the average working man is too poorly paid to properly com-

pensate a doctor for his time and trouble through serious illness to himself or in his family. We know further that the average working man does not see a doctor for many ailments but must content himself with home remedies or unskilled treatment. We, as doctors cannot deny that unrestrained contact with the medical profession and the absence of the hindrance of costs with necessary contact will be productive of great gain to the race.

University students whom we may assume come from the average of our population are discovered in their university physical examinations to present many defects and abnormalities. Most of them of a character which early scientific care would have prevented.

Under Social Insurance the doctors will certainly get a far larger volume of work to do.

Every lodge doctor can tell us that the cases presenting comparatively trivial ailments will greatly increase in number.

There is another consideration. Without Health Insurance, the tendency is now for individuals to combine in groups for contract medical work. Such medical work is far below standard. Think of the infinitesimal fee accepted and sought for by the doctors who do this contract work.

It should be recalled that in California there exist already certain elements of Health Insurance. The County Hospital, State and City Boards of Health; the Clinics; the City physicians; the Hygienic Laboratories. The City Laboratories; Lodges; Hospital Associations and the Trade Unions. Some of these can easily be utilized in a compulsory Health Insurance plan.

There is, after all, some very firm ground for complaint about Medical work, as it is.

It has been tritely said that the prince and the pauper, receive the only good medical attention, meaning that the rich man can pay for all the necessary scientific investigations, and the pauper, in the free, high-class clinics, receives complete scientific investigations at no expense to himself, but his time. Furthermore, it has been stated, that the only good scientific work is done in the University Clinics. I take great exception to any such statement, because it is misleading, and is not correct. There is excellent and efficient work done in private practice. It has the fault of not making statistics only. The University Clinics certainly do good work, from a scientific standpoint, but from the standpoint of an efficient physician, they may fail, especially viewed from the angle of Health insurance, where efficiency and the minimum loss of time counts.

I know of a woman, who went to a clinic for treatment of hypertrophied tonsils. She spent six days undergoing observations and various tests for records, and finally had her operation. She lost about five days from her work *unnecessarily*.

Health Insurance cannot succeed unless everything is considered. Unless we consider conservation of time, conservation of efficiency of the patient, and conservation of efficiency of the family interested in the patient.

I wish to interject here my idea of the distribution of the burden of this Insurance. In my opinion the employer should bear part of the burden. There should be a money obligation so that he will have a definite interest in the health of his employees—and from the other point of view, because he has an interest in the health of his employees. It costs the employer on the average $35.00 to break in one new hand. Also, work costs health in many occupations, and the work or the conditions of work can be modified by the employer to affect health.

The employee should bear a share. He should bear a share because he should appreciate the costs. This would make him co-operate in following the Rules of Health and Hygiene and of care of his fellow workmen. There would then be a self-interest.

The State should bear a portion of the burden because this is a public health measure, and as such should be borne evenly by all.

I come now to the discussion of the advantage of retaining existing relation between patients and physicians. There is no doubt of the great value of confidence in the doctor in medical cases. It is granted that in surgery, the manifestation of skill is more apparent than in medicine, and an unfamiliar doctor may impress quickly. But, in medical cases, acquaintance and confidence gained thereby, count far more. We cannot ignore even the family feelings, or we are not physicians, though we may be scientific men.

We cannot, and should not disorganize the relation of doctor and patient, and replace it by a machine. Psychology is not a machine and psychology plays an important part, in the practice of medicine.

Now as to income of physicians. Statistics vary so tremendously that it is very hard to arrive at definite conclusions regarding the amount of work and the income of physicians. We should understand fully this difficulty, and should make up our minds what kind of compensation we are willing to accept and what the likelihood of getting such compensation is under any proposed plan. Statistics tell us that each individual subject to this law may expect eight or nine days of sickness in a year. It is easy to figure that if two-thirds of the entire population is involved—there will be ten or twelve million days of illness. If there are 5000 doctors and 10,000,000 days of illness there will be 2000 days of illness per annum per doctor.

I have kept you long enough for speculation and fragments of thought. With all of this matter is subject for your Comfittees and subject for careful consideration and report, for you to study at your leisure.

The medical service plan, which I alluded to in the beginning of my paper, and which I feel from my acquaintance with accident insurance work, would be feasible for California, is as follows:

There would be a Health Insurance Commission, whose duties would be parallel to those of the Industrial Accident Commission, now in existence. It would preferably have one medical member. There would be a medical director. Representing the medical director, there would be in the various advantageous geographical centers, district

chiefs, under whose charge the work in the district would be carried on. Each district chief would appoint a group of specialists, whose duty it would be to consult with the general practitioner in cases presenting difficulties of a special nature, or to take charge of cases within their specialty. These specialists or consultants would be selected for fitness, preferably by a medical body, such as the State Medical Society. They should not in my opinion be selected by the State Board of Medical Examiners, for that board is not competent in its present organization to give valuable assistance in such a matter. These specialists would not be salaried men but would be paid by the case or visit as would the general practitioners.

Attached to each district medical headquarters, would be laboratories either formed or subsidized, X-ray laboratories, hospitals and drug stores. Where there were already established laboratories, as in the larger cities, arrangements would be made with them for the care of the clinical work. The object should be to facilitate to the greatest degree possible accurate and prompt clinical work.

The new bill providing for State Board of Health units and laboratories, if passed, would be of great assistance. Towns of less than 20,000 could use state laboratories. Larger towns could use municipal or private laboratories.

Every physician now licensed in the state would be eligible, and he would signify his willingness to do the work according to the fee schedule, and would subscribe to the arrangement and rules provided by the commission. He would then maintain his position in the community and continue with his patients undisturbed. There would be, however, a very accurate and prompt supervision of all medical work.

You are all familiar with the group system of work, as it has been carried out in Boston, and other places. You have been more recently apprised of the organization in St. Luke's Hospital in San Francisco. A modified scheme of this sort applicable to selected cases would be of greatest advantage. There is no doubt whatever, that consultations, if free and easily obtained would be far more common. Furthermore, they would very quickly promote scientific work and elicit from the medical profession its very best skill and results.

The plan would involve accurate reports and accurate accounting. It would provide that immediate report be made with tentative diagnosis and brief account of symptoms and procedure on the part of the visiting physician for every new case. Record should be comparable to those in a good clime.

The object in this is to place before the district chief, information upon which he can base an estimate of the character of the attendance rendered by the visiting physician. The chief would very quickly appreciate the ability and the limitations and the character of such limitations of each doctor in his district. He could make his plans accordingly. If records were inaccurate, or inadequate, if laboratory work indicated by the symptoms had not been requested, if deductions were wrong, or if for any reason the case seemed to need assistance, the district medical chief would communicate the same to the physician in charge, and offer the consultation which seemed indicated. There might even be a clinic upon the case, with the least possible delay.

Such a group system would be a college in which the members would become familiar with each other's capabilities, and I submit to you the opinion that rivalry would be supplanted by co operation, and suspicion, by respect. The bane of the existence of the Industrial Accident Commission, and its medical director, is the lack of adequate histories of cases in which important injury has been received.

One of the gravest shortcomings of the medical profession, seems to be inadequate history keeping. In suggesting such a plan, I have clearly in mind the fact that the medical profession will not without resistance place itself under supervision.

I take the stand that the work of the profession should for its own good, be supervised. It now is the only profession whose work is not subject to review. The *best* medical work is done in colleges and institutions. Supervision is strict. Accountability is accurate. Supervision and accountability would greatly enhance the efficiency of medical service anywhere. Many of the best of the profession voluntarily place themselves under such supervision.

Under such a plan a doctor once having accepted the responsibility of this class of work, would be just as free to move from one part of the State to the other, as he is to-day. Furthermore, there would be less unprofitable rivalry. It would be expected that every man at stated intervals would be entitled to vacations and holidays, and furthermore, he would be entitled to periods for study. It should be one of the positive duties of the district chief to see that his practice is handed back to him intact upon his return.

A great deal would depend, naturally, upon the character of a chief of a district. I know a great many men who are capable of carrying out such a duty, scientifically, honestly, impartially and with tact.

Whether the medical profession likes it or not, it is more than probable that health insurance will be with us in three or four years. We have ample time to get together to formulate our plans and to make up our minds. Furthermore, we have time to arrange things to our advantage, or at least to make a strong attempt, *but we must get together.* There are five thousand doctors in this state eligible to our Society, and only about half of them are members. The outsiders, too, should be made to see the advantage of co-operation.

The Social Insurance Commission has begun fairly with the medical profession and has invited the State Medical Society to appoint representatives and to confer with it. If the medical profession is not organized and is not a unit behind its committee, the committee will have a weary time of it if some other group in society, which is organized, opposes it.

One of the chief dangers is a law which will permit of contract practice, underbidding and exploitation of the medical profession. No law

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should be acceptable without specific provision to prevent this.

There are men willing, and anxious and eager to exploit the profession and the public and they have done it, and they will do it again if they are permitted.

In conclusion let me urge you to pay greater attention to the literature which will be placed before you from time to time, to view this subject with an open mind. Be ready to give and take a little to secure uniformity of opinion. Be ready to respond promptly to calls for information and action.

THE OPERATIVE TREATMENT OF VERTEBRAL TUBERCULOSIS.*

By ELLIS JONES, M. D., Los Angeles.

This paper is based upon an experience gained from thirty-two cases of bone transplantation for tuberculous spondylitis extending over a period of three years. Dr. Albee has operated three cases in my Los Angeles clinic which have been under my care and I am including them in this paper. Realizing that enough time has not elapsed to be able to draw trustworthy conclusions as to their ultimate results, cases operated during the past six months are omitted.

Albee's technic has been rigidly adhered to in every case, except one, where the transplant was grafted laterally into the bases of the spinous processes. In all other cases a tibial graft has been transplanted into the split spinous processes of the diseased vertebræ. In the lumbar region, the transplant has included one vertebra above and below the lesion. In the dorsal region, the transplant has included two vertebræ above and below. In all cases the transplant has consisted of periosteum, cortical bone, endosteum, and marrow substance. The wisdom of including these structures in all grafts is obvious, as has been demonstrated by McWilliams, Phemister, Albee and others.

A motor saw, we have found, saves time, avoids unnecessary traumatism, eliminates shock, and favors precision in fitting and shaping the graft to the size and curve of the kyphosis. The use of hand instruments, the mallet and chisel, in removing the graft and shaping and molding it, is crude and except in cases of extremely moderate kyphosis,—inexact. That some surgeons persist in the use of manual instruments for the removal of the transplants, owing to a personal pride in a real or fancied ability to do so deftly, is deplorable. We can not conceive of any surgeon successfully attacking a kyphosis of any considerable size except with the use of a motor outfit.

To Dr. Albee, we are indebted for the new treatment of spondylitis. Such treatment we believe is indicated at all ages, where pain and muscular spasm demonstrate destruction and crushing of the vertebral bodies. The earlier the operation is done, the better the prognosis. It is especially indicated in the presence of psoas abscess, paraplegia, and increasing deformity. Wherever fixation of the spine is permanently indicated, the use of the transplant, or in other words, internal fixation, is definitely called for.

The Albee operation *is not a panacea* for tuberculous spondylitis. It is simply the most efficient method of splinting the diseased vertebrae that has ever been devised. Orthopedic surgeons have long realized the impossibility of obtaining actual immobilization of diseased vertebrae by any external means. Spinal braces, plaster jackets and recumbency, secure partial fixation only. One great advantage of Albee's method is that it accomplishes fixation in less than a year's time, which is in marked contrast to the five to ten years required by external treatment. The bone transplant rigidly, securely and definitely splints the vertebrae, and prevents further deformity by controlling the leverage action of the diseased vertebrae. Indeed, in suitable cases, the kyphosis is actually obliterated. The splint action of the graft in its attachment to the spinous processes (the posterior arms of the lever), prevents the approximation or crushing together of the bodies (the anterior arms of the lever). In the dorsal region, this is an especially important factor since respiratory action increases mobility in spite of any form of external fixation.

Calvé and Mènard have shown that tuberculous bone is never restored from the diseased parts, and that if partially destroyed vertebral bodies are held apart by external fixation, they will only come in contact again, and the crushing and kyphosis will recur, when these supports are removed. Internal fixation corrects the kyphosis and permanently separates the diseased vertebral bodies.

Considerable discussion has arisen as to the length of post-operative treatment. In the adult cases, reported in this paper, the patients were discharged from the hospital at the end of six weeks, and except in two cases, when in deference to the wishes of the attending physician, braces were temporarily applied, no external fixation was employed. We have found no reason for the use of an additional support in any of our adult cases.

On my service at The Los Angeles Children's Hospital, the post-operative routine is six months of recumbency and helio-therapy. In two cases, operated by other men, in which too short a graft was used, and the cases required reoperation, an increase in the kyphosis was noted and the convalescence protracted to eight months' recumbency.

It is now three years since I operated my first personal case. The thirty-two patients ranged in age from three years to forty-eight. The disease had existed from six months to twelve years previous to operation. The kyphoses were in all stages of prominence. The location of the disease was dorsal in twenty-one, dorso-lumbar in four, and lumbar in eight. The largest number of vertebrae involved was six. The per cent. of successful results is 96 per cent. In these cases the least gain in weight was six pounds, the greatest thirty-eight pounds. Of the total number of cases operated, seventeen were children and I am able to report

* Read before the Tuberculosis Section, Medical Society State of California, Fresno, April, 1916.

that twelve of these patients were apparently well in the minimum time of six months after operation. In two other cases, Japanese children, I have been unable to obtain reports since their discharge from the hospital, with all active symptoms relieved. At present writing, 14 months after operation, this patient is walking and apparently cured. In one case with a paraplegia of 22 months' duration, there is as yet no relief from paralysis eight months after operation. One case of paraplegia cleared up two months after operation and one year later is free from symptoms. There has been no mortality incident to the operation. One little patient died of miliary tuberculosis four months after operation. Another patient died on the fifth day; the pathologist reporting a stenosis of the duodenum and bile duct, with acute gastric dilatation. In none of these cases was there the slightest evidence of post-operative shock. One case operated ten months ago with dorsal disease, in which a secondary infection occurred from a sinus adjacent to the operative field, and in which a portion of the graft sequestrated, is now entirely free from symptoms. At the same time, the transplant, which was a curved graft, was broken, and yet union occurred even in the presence of infection. It is in children that the post-operative treatment should be more protracted, and patients should be kept under constant observation and control. At the Children's Hospital, we find heliotherapy an invaluable adjunct to operative treatment. Six of the cases had been long and faithfully treated by conservative orthopedic measures for periods ranging from two to six years. As to the technic in children, it is not necessary to split the shafts of the spinous processes, which indeed in several of the cases was impossible, because of their extreme thinness. The tips may be split, and the periosteum stripped off the shaft, and the transplant firmly sutured as Ryerson has suggested. I believe it is because of the small size of the spinous porcesses in children that union is slower and less certain than in adults and that, therefore, recumbency for a greater length of time is essential.

In fifteen adult cases there has been no mortality due to operation. One patient, a desperate case, with extensive pulmonary involvement died six months later of a general tuberculosis. Two cases have been lost sight of, one of which was operated at the Los Angeles County Hospital before the Southern California Medical Society in December, 1914. Both patients were discharged from the hospital as cured. In the adult cases, the results have been particularly gratifying. In five cases with psoas abscesses, four have absorbed, and in the fifth case, operated one year ago with two psoas abscesses, there has been a gain in weight of thirty-eight pounds, a disappearance of one abscess,—a small mass the size of a walnut is all that remains of the other. The same patient, a young woman of thirty-four, is spending eight hours a day over a typewriter and when examined one week ago, gleefully announced that she had been dancing all winter. This same patient was paraplegic for three months in 1907 and treated with plaster and brace fixation for four years.

The early relief from pain and the sense of security, are quite noteworthy, and have been in my experience constant features. These adult cases are particularly attractive and I can think of no disadvantages that can be attributed to the operation. On the other hand, it is certainly a decided advantage, as Rugh points out, where, in the case of a wage earner such an operation "makes him again an independent instead of a dependent member of the community in at most a year's time." If no other argument were presented to justify operation in a case, this one alone would be sufficient.

Disadvantages commonly attributed to the operation are suppuration, loss of the graft, and increase of deformity. These disadvantages, I believe are the result of faulty technic. We can not always escape infection. The infection occurring, in my experience, has had no bearing on the final result of the operation. Any increase in deformity is due to too short a graft, which is entirely a matter of technic, or from an extension of the disease to the vertebrae beyond the graft.

Avoiding errors in technic the results in these operations will, I believe, favorably compare with those obtained under any other form of treatment of vertebral tuberculosis as yet devised.

THE PHYSICIAN'S RESPONSIBILITY TO LIFE INSURANCE.

By PHILIP KING BROWN, M. D., San Francisco.

Since the various aspects of a social insurance program are being thoroughly investigated in California and one of these aspects concerns the important relation of physicians to the movement, it seems fitting to present to the medical profession some light on the relation in which physicians now stand to insurance. Valuable as is the protection of any sort of insurance, and universal as should its application be, it is no stronger a protective factor than is its weakest part. Its funds must be economically and safely administered, its resources wisely invested, its business methods above criticism and the medical examinations of its clientele kept up to a high standard. The history of life insurance is marked by a large chapter of mismanagement, misappropriation and bad selection of risks. Regulation by law has been necessary to correct many of the conditions, with the result that a large number of the companies have had to go out of business. Those that remain in the field, either because they were well and honestly handled in the beginning, or because they are forced into recognized standards of administration by legislative regulation and commission supervision, are as a rule enormously prosperous organizations, able to purchase whatever they need for the successful administration of their business. The medical examination of their so-called applicants is one of the commodities that they have purchased in too many cases at a rate and of a kind that does not afford them the protection in a full knowledge of the risk they assume, that they have been obliged to provide in the business part of their affairs. Through the

effort of insurance companies to bolster up this protection without expense to them, an abuse has sprung up and been tolerated by the profession for years and it is to point out some phases of this abuse that the accompanying correspondence is published. It represents my correspondence with one company whose medical destinies are presided over by a man of high intelligence and the letters are published with his consent, although his name and the name of the company are withheld for the reason he gave, that the president "would go up in the air" at any suggestion of changing the medical fees much as he himself would like to do it. I have a collection of copies of my correspondence with numerous medical officials of a wide range of companies, for I have consistently taken the ground for many years that I outline in my letter, and have been willing to debate the subject with any of them who chose to take it up with me. While this correspondence does not represent all the light that might be thrown upon the matter of medical compensation by insurance companies, it points plainly to the fact that most of them are run under the principle that "money talks" in a commanding way, and the commands have been left too often to secure at the least possible price, some semblance of adequate medical protection. I do not wish to infer that the medical work done by all companies in examining their applicants is of a low grade or poorly paid. I am convinced that it is enormously influenced by unhealthy principles of commercialism and illustrates a fact which is likely to be called attention to very forcefully by the educational work being conducted through the efforts of the Life Extension Institute, that innumerable physical conditions of ultimate grave consequence are overlooked in their incipiency by insurance examiners.

In the program for health insurance it must not be wondered at that medical men view with apprehension the entrance of private insurance companies into the field. We have the astonishing records in the State of California from the medical head of the state organization for handling the insurance under the workmen's accident compensation law, that the working men were better cared for before the law than they have been since. Even the charity cases in fairly well kept county hospitals, according to his statement, get better care than they do under doctors of private insurance companies. Nothing could testify more eloquently to the fact that cheap medicine is often poor medicine.

With the sincerest belief in a very extended social insurance legislative program I cannot but view with suspicion a continuance under present conditions of the relation of physicians to private insurance companies who are striving to be made a part of the program.

I am not criticising the men who accept salaried positions and insist upon adequate opportunity and resource for examination, for I think probably the best work is done by these men. The principle which seems to me wrong is the effort of insurance companies to buy at the cheapest possible rate the medical services which should be more essential than they are to proper business protection. Until the question has been more extensively brought forward and corrected by legislation, I cannot see that the commercial companies will be free from the danger of inviting growth of business at too great an ultimate cost. If this is true then insurance is costing the public more than it ought to because badly managed in regard to the medical protection afforded.

———— LIFE INSURANCE CO.

San Francisco, Cal., October 13, 1916.

Dear Doctor:

Sometime ago, in answer to an inquiry I made of you concerning a patient of yours who applied to this company for life insurance, you wrote me a reply which interested me very much and touched upon a subject which I had had in mind for some time; namely, that *when physicians are requested by life insurance companies for information concerning their patients, they should first receive assurance that the patient is willing that the physician should impart such information, and secondly, that the physician should be reimbursed for the information he has gained by his examination and treatment of the case.* With a view to taking these matters up seriously, may I ask your views on a few considerations relative to them?

In the first place, would you consider a confirmative answer by the applicant to a question on the examination blank sufficient authority for the physician who has formerly treated him to give the company data concerning his physical condition, or *do you think a signed statement to be transmitted to the physician is necessary?* Secondly, *what fee do you think would be adequate for the information solicited?*

In considering this fee, it must be said that the information asked for by the insurance company is a commodity in the possession of the physician for which he has already been paid by his patient. Therefore, if the patient consents, this commodity may be transferred to a company without any loss to the physician. If this is true, an adequate fee for imparting this information would be one which would simply recompense the physician for the time and trouble it took him in looking up the information and forwarding it and not for the skill or time it took him in acquiring it.

In the interest of a cordial relationship between the medical profession and the life insurance business, I have no doubt that you will be willing to express yourself in regard to the above.

With very kind personal regards, I remain,

Very truly yours,

.....

Medical Director.

October 24, 1916.

Medical Director,
——— Life Insurance Company,
San Francisco.

Dear Doctor:

I have received your letter of October 13th, and believing that you seriously wish to meet the problems presented by my original letter to you I will endeavor to answer your questions.

To your first question, which is whether an affirmative answer to the printed question on an application blank filled out for the insurance company requesting permission to apply for data to the applicant's physician is sufficient to warrant the latter in giving to the company information regarding the applicant, I answer unqualifiedly "no."

No one would pretend that a physician is authorized under any circumstances to give such information without the consent of the patient, and I consider that such consent on the part of the patient ought to be expressed *to the physician* in order to justify him in giving out the information. I also think that the physician for his own protection ought to have such consent on the part of the patient expressed in writing.

One thing to be remembered is that frequently, for the purpose of getting rid of the importunities of a too persistent life insurance agent, a patient adopts the expedient of referring to his family physician for data as to his condition. The physician, in the absence of any direct request to him from the patient is certainly justified in doubting whether the patient really desires that the information in question shall be disclosed.

I have repeatedly been asked over the telephone by insurance physicians to give a statement about a patient's health from my knowledge of conditions several years before. In my opinion such an offhand request deserves no consideration. The physician's reply, unless he consults his records, must necessarily be a matter of memory, and to ask him to stop his work and hunt up his records is an impertinence of which probably no one would be guilty if it were not for the facilities afforded by the telephone. I consider that a physician has no business to retail the private affairs of his patients over the telephone.

Assuming that the consent of the patient to the giving of information by the physician has been unequivocally expressed, the physician's report to the insurance company ought to be in writing, and in order to be of any real value ought to be a properly formulated, detailed statement of all his previous examinations of the patient. There can be no doubt that the course so frequently adopted of applying to the family physician for a verbal report, either by personal interview or over the telephone, has at least occasionally been adopted in hope that the physician will gloss over doubtful conditions, and that a clean bill of health from him may lead to an acceptance by the company of the risk which otherwise would be rejected. I know from my own experience that it has happened before now that unscrupulous agents have even asked the physician to modify his report in order to facilitate the issuance of a policy. I know of one recent case in which a man with an aortic regurgitation of twenty years' standing, with distinct angenoid pains, obtained from a well known company a policy of $25,000. It is inconceivable that this could have happened if the family physician had been consulted and had given a detailed report such as I have indicated. Whether this was a case of bad medicine or bad morals I am unable to say.

Your second question is, what fee I think would be adequate for the information solicited? To answer that question with precision is only in a slight degree less difficult than it would be to answer the stock question, "How long is a piece of string?"

I feel very strongly that the assumption upon which many insurance companies seem to act, to the effect that they have a right to obtain gratuitous information from the family physician of an applicant for insurance, is wholly unwarranted. I also feel that a little reflection will convince you that your own suggestion to the effect that the information asked for by an insurance company under the supposed circumstances is a commodity in the possession of the physician for which he has already been paid by his patient, and for that reason he ought not to charge any more than enough to compensate him for the time and trouble of consulting his records and forwarding the information contained therein, is essentially fallacious.

Such a suggestion might be appropriate, if the question were one of applying to a carpenter for certain measurements, the making of which had already been fully paid for, but it is wholly inappropriate as applied to the opinion of an architect or civil engineer with regard to the best method of dealing with a problem of the kind which are dealt with by men of those professions. If it were true that the information which a physician is able to furnish is merely a commodity in his possession for which he has already been paid, it would seem that all that is necessary is for the insurance company to apply to the patient for the information in question, which presumably will have been furnished to the patient at the time when he is supposed to have paid for it. If the idea is that the physician is merely called upon to state whether the patient is telling the truth or not about his own condition any physician would certainly be justified in refusing to be bothered by any such impertinent request.

A physician who is called upon with the consent of the patient is in very much the same condition as a lawyer who, after having reported upon the title to a piece of land, is asked to report to some other person with regard to the same land. It has never been supposed under such circumstances that the mere fact that the work devolving upon such lawyer in preparing his second report has been facilitated by the work already done by him in preparing his first report ought

to affect in any way the amount which he is entitled to charge for making his second report.

In my opinion the fee which a physician is entitled to charge for furnishing a report in regard to the physical condition of a patient is somewhat in proportion to the amount of the insurance sought as well as to the medical complications of the particular case. It is obvious that the responsibility assumed by him in expressing a written opinion upon which will depend a transaction involving $50,000 is much greater than the responsibility which he assumes if the amount involved is only $5,000.

There is a distinct difference between a formal written opinion and a casual statement to a patient with regard to his condition. Not only is there obviously a greater amount of work and care involved in the preparation of a written opinion, but also the opinion itself when prepared deserves and receives greater consideration and weight than if it were merely a verbal statement of conclusions. For both of these reasons a physician is entitled to a higher compensation for a detailed written report to an insurance company than he would normally charge to his patient for a verbal expression of opinion.

There is also a great difference of weight attributable to an opinion based upon an examination which perhaps was made a long time before and of which only a meagre record was kept, and an opinion based upon the fullest possible records. My own experience has been in all cases which I have been called upon to examine to get all the ascertainable facts, including the results of X-ray photographs, laboratory aids, and so forth, and having done so to preserve complete records thereof for future reference. I think you will agree that a written opinion based upon the records of a series of past examinations may at times have even more importance than that which attaches to the ordinary examination of the applicant by the insurance company's physician.

When the amount of insurance sought by an applicant is high it is proper for the company to require, and some companies do require, not one, but several examinations of the applicant. It is also eminently proper that the company should in such cases take especial pains to ascertain the applicant's medical history. But it is also proper that for the increased protection secured through obtaining the applicant's medical history from those who are in a position to furnish it, the insurance company should pay in proportion to the value of the protection so secured.

The assumption on the part of insurance companies that for some unexplained reason they are entitled to obtain such information gratuitously or at a nominal expense, is particularly unwarranted in view of the exorbitant prices which they willingly and cheerfully incur for the purpose of obtaining new business. If the managing officers of insurance companies were half as solicitous about securing for those whose interests are committed to their care adequate protection against the assumption of improper risks as they are about increasing the amount of outstanding business, they would never begrudge the payment of an adequate compensation for the kind of information which is indispensable for proper protection. The fact is, that one of the crying evils about the business of life insurance in America is that the getting of new business is compensated out of all proportion to the work done, whereas the far more important work of protecting the company and its stockholders against the taking of improper risks receives altogether too little compensation.

Government regulation of insurance companies was absolutely necessary before they became in any way the benefit to humanity that they pretended to be and now are when their funds are honorably and wisely administered. There remains even now one form of security and protection of their policy holders in more extended medical investigation of risks that they are not ready to pay for though still lavishly spending for exaggerated increase in their business.

Very truly yours,

PHILIP KING BROWN.

THE USE OF PURE CARBOLIC ACID IN SELECTED CASES OF CHRONIC MIDDLE EAR SUPPURATION.*

By G. W. WALKER, M. D., Stockton.

The use of pure carbolic acid in the treatment of certain selected cases of chronic suppurative ear affections, came into my mind because of my having been enthusiastic in the use of it in suppurations in, and about joints, and pus pockets of any part of the body, when in general practice before I limited my practice to a specialty.

Phelps of New York,[1] in 1900 described the use of pure carbolic acid in joint suppurations. My use of it in general practice came from his description. He applied it to the walls of a cavity from which the pus had been evacuated, and followed it in two minutes by absolute alcohol to check the action of the phenol.

In treating chronic ear suppurations, of course, first: The cause for ear trouble existing in the nose or throat, must be most carefully corrected and careful cleansing of the external canal done, that no obstruction to the pus escape be left; in fact, the usual care necessary there should be given—that I will not delineate now, but proceed to describe a method of using pure carbolic acid, not heretofore described in existing literature, on treatment of chronic ear suppuration, so far as I could find. In many cases we have felt called upon to advise mastoid operation, but patients have been reluctant to consent to it.

In a certain class of cases of suppuration, where sequestra exist, or where large masses of caseation or cholesteatoma are present in inaccessible localities, I do not have hope of stopping suppuration by this method, but we can always use this treatment whether we can get consent for operating or not, and in many instances, successfully, that looked like only surgical cases before. In my first case, in which I used it, the patient, a man fifty-two years

* Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 20th, 1916.

of age, referred by Dr. Oliver of Stockton, Calif., April 25th, 1914, gave a history of a discharging ear in infancy. Since then the ear has discharged freely at intervals, and between such intervals of free discharge, some slight discharge, pus always ill-smelling. Upon examination I found the external canal of the left ear closed by swelling of the superior wall, with pus discharging as much as it could, when pressure was great enough. Upon holding upper wall up, pus discharged freely. Nose and throat examination showed extreme septal deflection, tonsils large and red, post pharyngeal wall rough and covered by mucus from above. Patient seemed in great pain and had a distressed look. I put in a wick of gauze to separate walls of external canal, and advised that radical mastoid operation would probably be necessary. On the next day the external canal was open from the pressure of the wick of gauze, which I had inserted the day before, and I could clean it out, and see that the pus was coming from a fistula, in the upper wall of the canal, just against the drum head. With a probe I could detect that there was a cavity about the size of an English walnut, or nearly as big, which seemed to be above and behind the tympanum. This I washed out with antiseptics, but the pus kept up as freely as ever, but the patient was not in pain to the same extent as before. After eleven days' use of antiseptics and care of this pus pocket, I removed the tonsils, and one week later I did submucous resection of the nasal septum; but after thirty-one days more daily care of this case, the pus was still flowing freely from this cavity and had a most foul odor, and the mastoid was tender with more or less pain, and headache on that side of the head, and I only failed to do a tympano-mastoid operation because I could not get the patient's consent. Then through the fistula with a long small cannula I injected the cavity full of melted crystals of carbolic acid and after two minutes I irrigated it very freely with absolute alcohol. For the following three or four days there was a gleet-like discharge, during which time I kept the external canal lightly packed with gauze, and the discharge stopped entirely. He gained twenty-five pounds in weight—all subjective symptoms ceased. The fistula closed and has never reopened in more than two years that I have observed the case. He thinks that he is very fortunate that he never consented to a radical mastoid operation.

Case two: Frank R. of Woodsboro, California, age twenty-three years, a dairyman, consulted us on March 11, 1914, because of chronic ear suppuration. He had been treated at various times by a competent specialist, but the pus kept discharging as it had done, since an acute suppuration had begun two years before, with acute exacerbations whenever he had an acute naso-pharyngeal inflammation. I removed tonsils and adenoids, and did septum resection a week later. His perforation in the drum head was just below and back of the center. After a month of care in which the pus discharge kept up, I injected through the perforation pure carbolic acid followed by alcohol. I used careful pressure in injecting the phenol by carefully and rather tightly packing around the cannula, before pressing the piston of the syringe. The blennorrhea kept up for about four days, during which I kept the external canal packed with sterile gauze, and within two weeks the perforation closed entirely and never reopened.

Case three: Mr. W. J. P. of Tracy, California, age thirty years, consulted us on March 25, 1914. He gave a history of chronic ear suppuration which he thought had lasted about twenty years. Had polypi removed at various times—I think three or four times, before he saw me, and consulted us now because a polyp was protruding from the external canal; heard watch only on contact. My notes say he needs tonsil and adenoid operation and septum resection. Did the tonsil and adenoid operation April 18. Removed polyp April 24, and used nitric acid on the base of it, completing the removal of what I had left. After about two weeks' treatment at intervals with the nitric acid, during which time pus was discharging as it had for years, I used pure carbolic acid followed by alcohol. Pus discharge ceased, perforation never closed, as he had very little drum membrane left, but tympanum cicatrized and there has been no further pus discharge and no reoccurrence of polyp.

Case four: Mrs. J. W. H., age forty-one, referred by Dr. F. W. McKibbon of Oakdale, California, consulted us on October 25, 1914; gave a history of chronic suppurating ear for fifteen years. Perforation near top of right drum head from which a foul-smelling pus was discharging. She had tenderness over the mastoid, and a radical operation had been suggested for her. I removed tonsils and the right middle turbinate on the 11th of November and gave her case the usual care until January 1 following, when, as pus was still discharging about the same as before, I injected pure carbolic acid through the perforation, using pressure to cause it to reach as remote parts as possible, following with absolute alcohol. Blennorrhea following for a few days, I kept canal packed with sterile gauze for about two weeks and perforation closed entirely, hearing gained more than 100%, and the patient was much pleased, as she had escaped mastoid operation.

Case five: M. S. of Lodi, California, sixteen years of age, chronic suppuration of both ears, right for six years and left two. Right ear had a large perforation, simply a crescent of membrana tympanic remaining. Pus from right malodorous. Perforation in left is located in lower posterior quadrant, but not large. Tonsils and adenoids had been removed five years before. After cleansing ear canal I used phenol with pressure through perforation and followed by alcohol. Discharge ceased to be pus at once, and had stopped entirely within about three days following, soon after which time the ear with the larger perforation became dry and cicatrized, and the one with the smaller perforation closed entirely, in which ear the hearing seemed to return to the normal, and hearing for the watch increased 30% in the one having the large perforation.

Case six: Mrs. J. N. C. of Stockton, California, age thirty-four, consulted us on March 16, 1914, and gave history of ear discharge in infancy and at intervals through life. Large central perforation in left membrana tympani. Tonsils hypertrophied, septum somewhat deflected. Removed tonsils May 18, 1914. Cleansed ear canal carefully, but pus kept discharging until July 21, when I used the phenol-alcohol treatment. No pus in four or five days, ear dry, perforation remains open.

Case seven: Chas. C., age thirty-five, a miner of Campo Seco, California, consulted us on July 16, 1915. History: Pus has discharged from left ear since childhood. Septum greatly deflected, tonsils hypertrophied, mastoid tender. Did septum resection and removed left middle turbinate July 19, 1915, and eight days later removed tonsils and cleansed ear, and patient went home and came to see us again on December 6, when I used phenol-alcohol through the perforation, located high up posteriorly, then lightly packed canal a few days

and pus discharge ceased and has not resumed since. Perforation closed.

Case eight: W. D. T., age forty-eight, referred by Dr. E. V. Falk of Modesto, California, September 16, 1915. Gave history of pus discharging freely at intervals and somewhat all along throughout life, as far as his memory went. Left membrana tympani almost entirely gone, malleus and incus gone. Pus very ill-smelling. Had at some time in life had a tonsillotomy, septum deflected and in contact with turbinates. I did a septum resection September 23, 1915, and tonsillectomy ten days later. Used phenol-alcohol January 29, 1916, as suppuration still continued in spite of all other treatment. February 2, no pus, ear dry afterward and cicatrized.

I have used this treatment in many other cases successfully, not here reported, but did not report them, as they were cases in which suppuration would have probably ended with ordinary treatment, advised in any text-book on ear diseases, or too recent to speak of as cured. Politzer [2] says, when foul smelling pus persists, after the use of cleansing and antiseptics have failed, the case demands tympano mastoid operation. I recognize that much has been done in the past, by ordinary methods of cleansing the tympanum through the external canal, or through the eustachian tube, and the use of weak solutions of antiseptics, but the use of phenol pure gives us the benefit of a most powerful antiseptic which does not cauterize except the epithelium. The epithelium is reproduced, and no permanent destruction has been done by the phenol. In radical mastoid, such as some of my cases would have demanded under other treatment, more destruction of tissue has to be had than with the phenol, to succeed, and that is followed by thicker cicatrices. When the oval and round windows can be left without thick cicatrices covering them, much more hearing can be retained than if they are covered deeply by scar. If this and all ordinary efforts will not succeed, of course, do a radical and do it before a brain abscess or sinusthrombosis, of otitic origin has formed. Of course, phenol pure has been used during the radical operation and why? To make sure, when some pyogenic surface might have been missed. If phenol can be gotten to the surface, without bone cutting, many cases can be treated which the patient would not have consented to have treated through a bone opening, and if it can be successfully done through a perforation, or a fistula, or an opening you may make with a knife in the membrane, where the perforation opening might not be just what is wanted, less destruction will have been done and the patient's reluctance can be easier overcome than for a radical mastoid. The hearing is always made better, never diminished.

When pure carbolic acid is introduced into the middle ear, there is first a burning pain for about fifteen seconds; then the burning disappears, and does not reappear for a few minutes, and as the alcohol used within two minutes checks the action of the carbolic acid, the after burning is not severe.

Care must be exercised that any surplus of carbolic acid, which may have been used, is not allowed to run down the neck, as it causes unnecessary pain. A large pledget of cotton, saturated with alcohol, held just under the external ear by an assistant, will catch any flow of carbolic acid and prevent burning. Any carbolic acid that has gotten into the external canal can be neutralized at once, instead of waiting the two minutes for the effect in the middle ear, by simply moping out the external canal with a pledget of cotton saturated in alcohol, which had been prepared beforehand, ready for this emergency.

It does not produce violent reaction in any case, and I have used it in a great many more cases than here reported.

As I said in the beginning of this paper, I think the cases for treatment by this method should be properly selected.

Discussion.

D. H. Trowbridge, M. D.: Dr. Walker's treatment is undoubtedly new. The use of pure carbolic acid in suppurative conditions, however, is not new. A great many of you will remember that Dr. Powell, now deceased, of the Post Graduate Hospital in New York, used carbolic acid 95% pure followed by alcohol for almost everything. In fact he used it so extensively that we dubbed him "Carbolic Acid Powell." It is undoubtedly true that in a great many cases carbolic acid does good work. It is also undoubtedly true that it has not been used very much in the treatment of suppurative aural conditions.

On being informed by your secretary that I was to discuss this paper, I endeavored to look the subject up, but found very little in the literature regarding same. I took the trouble to write to some of my colleagues on the subject, and I find that none of these men have used carbolic acid in suppurative conditions of the car to any extent. So I feel that Dr. Walker is practically a pioneer in the use of carbolic acid, and I think he deserves a great deal of credit for having the nerve to inject as much carbolic acid as he does into the middle ear and mastoid cavity. I would like to ask how much he does inject? He speaks of one case in which the cavity was as large as a walnut. I should like to ask if he filled this full of the carbolic acid? As far as the treatment is concerned, personally I know nothing about it, as I have never used it, but as I stated before none of the doctors from whom I received letters have ever used the treatment to any extent.

E. C. Sewall, M. D.: This interesting paper of Dr. Walker's shows careful work and observation. Carbolic acid has played an important part in the surgery of the past and may be relied upon in many conditions.

If I understood Dr. Walker correctly in his report of the case, in which he found a cavity above the level of the superior wall, of the external canal, as large as a walnut, and if I know anything about the size of walnuts, I think the doctor is too modest in claiming the cure of a "middle ear" condition.

Regarding the history of the use of carbolic acid, Lord Lister used pure carbolic acid in the treatment of suppurating wounds. Seneca Powell was the first to demonstrate to his astonished colleagues that he could wash his hands in pure carbolic acid, followed by an alcohol bath, which removed every evidence of the carbolic blanching.

Later Phelps, as Dr. Walker stated, used pure carbolic acid followed by alcohol. In regard to its use in ear disease, Wendell Phillips as published in the New York Medical Record, I think some time in the '80's, used this treatment over a long period for chronic suppuration of the middle ear. He even went so far as to introduce it into the attic with a syringe. He later abandoned the treatment, possibly because such disease usually requires surgical treatment. I cannot get Dr. Walker's reasoning in

IMPORTANT NOTICE

The Scientific Program Committee begs to announce that the program following has been sent to the printer on January 13, 1917. It is practically complete. Please report any inaccuracy to either A. B. Grosse, 162 Post Street, San Francisco, or R. A. Peers, Colfax, Cal.

PROGRAM.

Tuesday Morning, April 17, 1917.

1. ADDRESS AND REPORTS OF COMMITTEES.

President's Address.
Report on Public Policy and Legislation.
Report of Committee on Public Health.
Report of Committee on Arrangements.
Report of Committee on Scientific Program.
Report of Committee on Social Insurance.

Tuesday Afternoon.

2. TUBERCULOSIS SYMPOSIUM.

Arranged by Dr. R. A. Peers.

2-B. GENERAL SESSION.

Dr. Harold W. Wright, San Francisco: Some obscure conditions causing peripheral nerve pain, with case reports.

THE SIGNIFICANCE OF PERSISTENT PAIN OR OTHER SYMPTOMS REFERRED TO THE PERIPHERAL NERVES.

By HAROLD W. WRIGHT, M. D.

Introductory:

The relation of the specialist to general medicine and the relation of the general practitioner or internist to the specialities.
The posterior nerve roots and pain; the sensitiveness of the dura mater, outer and inner layers.
Reflex pains in general; review of the sympathetic system.

(A) Cranial Nerves:

Gummatous infiltrations of meninges or the cranial bones; osteo-fibrous exostoses, post-traumatic or malignant; sinusitis; auto-toxic or focal infections with migraine; cerebral lues; brain tumor, e. g. cerebello-pontile angle and tic douloureaux; neuro-psychic headache, post-traumatic or functional.

(B) Cervico-brachial Nerves:

Arthritis of cervical spine with occipital neuralgia; arthritis of the shoulder with brachial pain; sub-deltoid bursitis; meningitis, luetic or pachymeningitis hemorrhagica; tuberculosis of the cervical vertebrae; fracture or subluxation of vertebrae; spinal cord tumor; giving pain in the shoulder often diagnosed "rheumatism" or "neuritis"; cardiac reflex pain; diaphragmatic pleurisy, giving reflex pain to the shoulder; aneurysm of the subclavian; postural strain; a frequently overlooked and common source of chronic pain between the scapulae, of "neurotic spine" and chronic ill health.

(C) Lumbo-sacral Nerves:

Tabes; frequency of laparotomy in tabes; luetic meningitis; oauda-equina tumor; aortic aneurysm; renal calculus; old fracture of vertebrae, unrecognized because of failure to properly x-ray; arthritis, hypertrophic and gonorrheal; of the spine and of the sacral-iliac joints; pelvic disease, in women especially; flat foot or weak foot; postural strain on the lumbo-sacral and the sacro-iliac joint; or from trauma; vicero-optosis, from postural defects, causing abdominal pains simulating appendix or gall bladder disease; the comparative rarity of essential sciatica with reflex sciatic pains; the greater frequency of postural strain as a cause of chronic backache in women than of pelvic defects.

Dr. E. H. Falconer, San Francisco.

KIDNEY FUNCTION IN CHRONIC NEPHRITIS AS DETERMINED BY MARSHALL'S UREASE METHOD FOR ESTIMATING BLOOD UREA NITROGEN.

By E. H. FALCONER, M. D.

Von Jaksen in 1893 showed that there was marked increase in non-protein nitrogen in the blood in chronic nephritis. Much work has been done along this line by other investigators since. The work of Tilleston and Comfort in 1914 on estimation of non-protein nitrogen and urea of blood in health and disease furnished reliable figures for the normal. Estimation of total non-protein nitrogen is too time-consuming and requires too much special apparatus for use as a clinical procedure. In 1913 Marshall demonstrated that the ferment of the soy bean, called by him urease, was specific for decomposing urea into ammonia which can be easily estimated by driving over into $\frac{n}{50}$ HCl and titrating against N 50 NaOH.

Here description of apparatus and method follows.

This method has been followed at the University of California Hospital in the medical service of Doctor H. C. Moffitt. Cases selected for this report are those diagnosed as chronic nephritis or those whose clinical symptoms suggested that they might be classified as chronic nephritis. Kidney function in these cases was estimated by the phenolsul-phonephthalein excretion in the urine and the urea nitrogen retention in the blood as determined by the urease method.

These cases have been tabulated according to clinical and laboratory findings as chronic nephritis primary, Table I and chronic nephritis secondary, Table II. These tables are arranged in such manner that one may correlate the history of symptoms, urinary findings, phthalein excretion, urea nitrogen retention in the blood and the clinical diagnosis with the post-mortem findings and subsequent history of the patient. It has not been possible to obtain the subsequent history of many of these cases. Only cases whose history or laboratory findings suggested chronic nephritis have been selected. In Table II the cases show a variety of pathological lesions. Only kidney lesions, however, appear to influence urea nitrogen in the blood. Whipple and coworkers have shown that in intestinal obstruction the total non-protein nitrogen is high but the urea nitrogen does not rise in proportion, an important point. Work is being done at present in the medical wards of the University of California Hospital tending to show that just before death the total non-protein nitrogen rises in the blood.

An analysis of tables I and II would seem to justify the following conclusions:

1. That in cases clinically chronic nephritis where the urea nitrogen is near or above 30 mg. per 100 c.c. of blood and the phenolsulphonephthalein excretion in the urine is low the case is probably a primary chronic nephritis of long standing and the prognosis is grave.

2. Cases clinically suggesting chronic nephritis and cardiovascular disease where the urea nitrogen is about 20 mg. per 100 c.c. of blood or below, are probably chronic nephritis secondary to primary cardiovascular disease. The phenolsulphonephthalein excretion in these cases may be low if there is chronic passive congestion of the kidneys present, otherwise it should be above 30%.

3. Cases whose urea nitrogen in the blood is between 30 mg. and 85 mg. per 100 c.c. of blood will probably not live longer than from six months to one year; where the urea nitrogen is over 100 mg. per 100 c.c.

of blood the prognosis is a fatal termination in a few days to two or three weeks.

4. On account of the ease with which this test can be performed and the brief time consumed it is a practical clinical procedure and of definite value in estimating kidney function and in more accurate diagnosis and prognosis in chronic renal disease.

Dr. H. R. Oliver, San Francisco.

THE PRESENT STATUS OF THE WASSERMANN REACTION.

By DR. H. R. OLIVER.

1. A summary of the status of the test as result of personal observation based upon serveral thousands of tests.
2. The specificity of the test in regard to other diseases or foreign conditions that may cause either a positive or negative reaction.
3. A table of the percentage of positive reactions in the various stages of the disease and the different anatomical lesions.
4. The date of its appearance in the blood and some of the causes of its delay and factors so influencing.
5. The variations in the amount of binding substance in different sera.
   A discussion of the so-called Wassermann fast cases.
6. The different results with different antigens.
7. The Wassermann reaction with spinal fluids and the dosages used, and the percentage of results with different cerebrospinal disease quantitatively.
8. Its use as a control on treatment—the so-called provocative test.
9. The interpretation of the results and the reading of the symbols so indicating.
10. Conclusions based on an analysis of the above results.

Dr. R. E. Bering, San Francisco: Report and results of 1000 cases of alcoholism.

RESULT AND TREATMENT OF ONE THOUSAND CASES OF DELIRIUM TREMENS.

By DR. R. E. BERING.

Showing the various types of cases, different methods of treatment, complications and deductions.

Dr. C. B. Hare, San Jose: Some gastro-intestinal problems.

COMPLICATING SECONDARY PATHOLOGY IN GASTRO-INTESTINAL SURGERY.

By CHAS. B. HARE, M. D.

Gastro-intestinal disturbances when surgical are seldom simple but usually complicated by secondary affections a result of the primary pathology.

The most common chronic affection demanding surgical interference is chronic appendicitis, congenital or acquired, and its sequela.

Pathological states that are subjects of operation may be secondary to some primary focus, their symptoms overshadowing the symptoms of the primary disease; and under these circumstances the predominant symptoms may be considered primary; the cause initiating them occupying a less prominent position but demanding surgical attention at the same time to effect a cure.

Before surgical interference is undertaken every effort should be made by means of a history and barium analysis to arrive at all of the factors entering into the disturbance, the operator should not be satisfied, however, with pre-determined conclusions, but when the abdomen is opened should inspect all of the sphincters, the bile tract, gall bladder and the sigmoid in all its bearing.

Wednesday Morning.

3. SURGICAL SECTION.

Dr. E. J. Clemons, Los Angeles: Internal hemorrhoidal operation and after care under quinine-urea anaesthesia.

INTERNAL HEMORRHOID OPERATION AND AFTER CARE UNDER QUININE-UREA HYDROCHLORIDE ANESTHESIA.

By DR. E. JAY CLEMONS.

Synopsis: The object of this paper is not to add anything new to medical literature but to present, with due respect to other Proctologic technic, a technic which will relieve our patient—pleasantly, safely and quickly; classifying internal hemorrhoids in terms of degree; bringing out the object of operative interference; giving some of the operative and post-operative advantages of quinine-urea hydrochloride anesthesia; describing the operative technic, in four stages; concluding with the post-operative care and conclusions.

Dr. Arthur L. Fisher, San Francisco: Painful conditions in and about the shoulder joint, their diagnosis and treatment.

PAINFUL CONDITIONS IN AND ABOUT THE SHOULDER JOINT—THEIR DIAGNOSIS AND TREATMENT.

By ARTHUR L. FISHER, M. D.

Apparent indefiniteness of the painful conditions in and about the shoulder; reasons for such indefinite ideas; lack of systematic methods of diagnosis of such conditions.

Innumeration of conditions causing pain in shoulder region.

Scheme of Diagnosis:

Methods of examining patient himself.
X-rays and their interpretation.
Laboratory methods.

Treatment:

Present treatment more or less empiric.
Suitable methods of treatment following positive diagnosis.

Dr. James T. Watkins, San Francisco: The value and limitations of the moving picture in teaching surgery; with demonstrations.

THE VALUE AND LIMITATIONS OF THE MOVING PICTURE IN TEACHING SURGERY.

By JAMES T. WATKINS, M. D.

Synopsis: The moving picture as a teaching aid has come to stay. Advantages are that group teaching is simplified; the operations can be repeated as often as necessary; the operations can be transported to other communities. Disadvantages are that thus far only operations on the surface of the body or near its surface can be pictured; that only in blood-free operations can fine technic be shown; that the problem of differentiation of tissues has not yet met with a practical solution.

Dr. Paul S. Campiche, San Francisco: Correction of malunited fractures:

THE CORRECTION OF MALUNITED FRACTURES.

By DR. P. S. CAMPICHE.

Owing to certain adverse circumstances, faulty union still occurs in a large number of fractures.

The surgeon and the patient then become so discouraged that no further step is taken for a long time, some patients remaining many months in a crippled condition before another surgical intervention is proposed and accepted.

Such pessimism and discouragement on the part of the treating surgeon is excessive and unjustified. Even in cases that have apparently ended in disaster, surgery and patience can often restore enough function and save quite a good deal from the wreckage.

Instances of such "salvage surgery":

A—for the upper extremity.
B—for the lower extremity.

Conclusions.

Drs. L. W. Ely and J. P. Cowan, San Francisco: The formation of new cartilage in joints.

THE FORMATION OF NEW CARTILAGE IN JOINTS.

By LEONARD W. ELY, M. D., and JOHN F. COWAN, M. D.

Conclusions drawn from experimental work done on the joints of rabbits and of dogs, in the laboratory of surgical pathology of Stanford University. This includes resections and injuries to the cartilage and bone. To this is added a description of several specimens removed from human joints that had previously been resected.

Dr. S. J. Hunkin, San Francisco: Fracture of the femoral neck.

FRACTURES OF THE NECK OF THE FEMUR.

By S. J. HUNKIN, M. D.

A plea for more optimistic ideals and a more consistent plan of treatment.

It considers the structural changes which generally lead to such fractures and which also interfere with its repair. Speaks of the results, expected and attained,

after the usual plan of treatment and considers the average bad result due to two things:

1st—The pessimistic outlook of the doctor.
2nd—The bad mechanical efficiency of the ordinary plan of treatment.

It deals with later methods which are eminently superior, suggests a plan of his own in certain types. The author thinks proper splinting to be of absolute importance and argues that under careful planning and ordinary circumstances practically as good end results can be expected as with corresponding fractures elsewhere.

Dr. Chas. G. Levison, San Francisco: Employment of intramedullary bone splint in fractures.

THE EMPLOYMENT OF THE INTRAMEDULLARY BONE SPLINT IN FRACTURES.

By CHARLES G. LEVISON, M. D.

(a) Advantages of this graft over the bone inlay.
(b) Removal of the graft from the fractured bone, doing away with the necessity for operating the uninjured leg.
(c) Comparison of the results of the intramedullary graft with the bone inlay.
(d) Has the bone graft rendered the Lane plate unnecessary?

Wednesday Morning.

3-B. MEDICAL SECTION.

Dr. Rex D. Duncan, Los Angeles: Radium—its local application as a therapeutic agent.

RADIUM—ITS LOCAL APPLICATION AS A THERAPEUTIC AGENT.

By REX DUNCAN, M. D.

(Attending Radium Therapeutist at the Los Angeles County Hospital. Attending Clinician in the Radium Clinic of the Graves' Memorial Dispensary of the Los Angeles Medical Department of the University of California.)

The author discusses briefly some of the physical properties of radium, the various forms of applicators and technique of application, with especial reference to dosage, screening, etc. The action of the rays and histological changes produced in morbid tissues by radiation are briefly described. The value of radium in the treatment of various malignant and non-malignant conditions is considered, including certain skin diseases, exophthalmic goiter, spring catarrh, angiomata, uterine fibroid, epitheliamata, sarcomata and carcinomata with especial reference to the carcinomata uteri. A large number of cases treated by the author are reported.

Dr. Walter W. Boardman, San Francisco: Hodgkin's disease and its treatment.

HODGKIN'S DISEASE AND ITS TREATMENT—WITH A REPORT OF CASES.

By W. W. BOARDMAN, M. D

I. Introduction:
   Descriptive definition.
II. Body:
   Brief of historical review.
   Review of recent work on etiology.
   Absence of a specific therapy.
   Consideration of our present therapeutic measures.
   Report of cases.
III. Conclusions.

Dr. E. C. Dickson, San Francisco: Botulism.

BOTULISM.

By ERNEST C. DICKSON, M. D.

The report will consist of a discussion of this type of food poisoning which is endemic on the Pacific Coast. It will include:

1. A report of ten unrecorded cases which have occurred in California and in Oregon within the past three years.

2. A discussion of the pathologic findings as illustrated by two autopsies and a series of experimental investigations.

3. A discussion of the etiology as illustrated by the reported cases and also by experiment.

There will be a series of lantern slides to illustrate the important pathologic changes.

Dr. Geo. H. Evans, San Francisco: Multiple serositis, report of a case; discussion of its classification

MULTIPLE SEROSITIS—REPORT OF A CASE WITH AUTOPSY FINDINGS—DISCUSSION OF ITS CLASSIFICATIONS.

By GEORGE H. EVANS, M. D., and M. J. PRICE, M. D.

Reference to the classification given by Kelly, Rolleston and others is given.

Pick's disease is not synonymous with multiple serositis. A broader classification is necessary. Author's case differs from those included in Kelly's monograph in that it did not present obliterative pericarditis but rather pericardial effusion. Clinical findings of case presented and discussion of autopsy report.

Dr. F. F. Gundrum, Sacramento: Rat-bite fever.

RAT-BITE FEVER.

By F. F. GUNDRUM, M. D.

Definition.
Distribution: California cases.
Etiology.
Transmission.
Pathology.
Incubation.
Symptoms: Skin; glandular; temperature; blood; urine; complications.
Prognosis.
Prophylaxis.
Treatment.
Report of Cases.

Prof. W. H. Manwaring, Arthur H. Meinhard and Yoshio Kusama, Stanford University: Analysis of the anaphylactic reaction by means of the isolated mammalian heart and the isolated mammalian lung.

ANALYSIS OF THE ANAPHYLACTIC REACTION BY MEANS OF THE ISOLATED MAMMALIAN HEART AND THE ISOLATED MAMMALIAN LUNG.

PROFESSOR W. H. MANWARING, ARTHUR MEINHARD and YOSHIO KUSAMA

Continuation of researches reported before the Society of American Pathologists and Bacteriologists, Washington, D. C., last May, and before the (New York) Society of Experimental Biology and Medicine, last June.

Wednesday Afternoon.

4. EYE, EAR, NOSE AND THROAT.

Session of general interest arranged by Dr. Hans Barkan.

TUBERCULOSIS OF THE EYE.

By DR. PHILIP H. PIERSON, San Francisco.

Abstract: The main lymph channels of the eye and their drainage; a brief description of the most important lesions produced by tuberculosis; its diagnosis with special reference to latent tuberculosis elsewhere in the body and the use of tuberculin; the treatment of ocular tuberculosis general, and with tuberculin.

LARYNGECTOMY INDICATIONS AND TECHNIC.

By DR. H. B. GRAHAM and DR. L. C. DRAPER, San Francisco.

Abstract: The authors will describe the methods of laryngectomy and will discuss the pathological indications for operative procedures in cases of carcinoma of the larynx, including the intra-laryngeal and extra laryngeal operations.

AN IDEAL INTRACAPSULAR EXTRACTION FOR CATARACT.

By DR. LLOYD MILLS, Los Angeles.

Abstract: Those American sponsors for the Smith "Indian" cataract extraction, who are spreading among untrained or poorly-trained men the gospel that the Smith technic is easily acquired and easy of safe human application, are doing a most excellent operation a serious injustice.

That extraction of the lens in its intact capsule is the ideal form of extraction is beyond debate, but the present consensus of opinion among American ophthalmologists is strongly to the effect that the Smith operation is one to be undertaken only by men whose technic is skilled and whose control and judgment are not easily shaken during the startling emergencies of intraocular surgery.

The faults of the Smith operation as applied to

cataracts without selection are (1) the frequency of unintentional capsulotomy in those cases where the anterior chamber is shallow, nearly all the capsule being left behind, together with much more cortex than usually remains after the most bungling capsulotomy operation; (2) in the Smith extraction with iridectomy, as advocated, delivery of the encapsulated lens becomes too easy and if the delivering pressure is continued too long or too ungently, or if the frail hyaloid membrane, now supporting the dislocated and bulging vitreous without aid from the iris, be subjected to the additional stress which so surely follows subduction, then sudden rupture of the hyaloid occurs, with loss of vitreous and more or less extensive prolapse of the pillars of the operative coloboma.

Reasoning from the ease of delivery of the encapsulated lens through the intact pupil in the eyes of pigs and kittens and from the splendid results of simple extraction combined with the fine peripheral iridectomy of Chandler (Hess-Pflüger), Mills, using the Smith incision, has made the successful application of this form of iridectomy, after the delivery of the lens in its capsule through the intact pupil. The iridectomy is safely performed after the pupil has been strongly contracted by 1% eserine for ten to twenty minutes, the flattening of the iris produced thereby, moulding the dislocated and bulging vitreous back into place and away from the wound.

1% eserine is instilled with especial care twice daily for the first week of convalescence.

This operation is applicable to any form of cataract which is associated with an anterior chamber of sufficient depth to preclude an unintentional capsulotomy.

The final result is cosmetically and visually perfect. The small central or nearly central pupil is mobile, the intact ring of iris prevents excessive flooding of the fundus with light and, save on close inspection, the operated eye can seldom, if ever, be distinguished from its fellow.

END RESULTS IN THE TREATMENT OF OZENA BY MEANS OF VACCINE.

By DR. HENRY HORN, San Francisco.

Abstract: Recapitulation of bacteriological findings; results reported last year confirmed in every particular; summary of results on last year's series of cases; results of treatment of present series; conclusions.

4-B. GENITO URINARY SYMPOSIUM.

Arranged by DR. ALFRED B. GROSSE.

Practical Value of the Complement Fixation Test for Gonorrhea. Martin Krotoszyner.

This communication is based upon the result of over 500 sero-diagnostic examinations of all types of gonorrheal infections that came under the author's observation during the last two years. A careful tabulation of the material on hand is presented with a view to arrive at deductions of practical value for physicians and patient. The points particularly interesting and in need of further elucidation, in this connection, are:

Relation of serological to clinical findings and its practical significance; change serological result from positive to negative as index of extinction of infection; value of test with regard to the all important questions of continued infectiousness and contemplated matrimony.

Conclusions.

Frequency and Significance of Casts in the Urine. Stanley Black.

Demonstration by Members of Pyelograms and X-ray Plates Diagnostic of Kidney Tumor. Discussion opened by Granville MacGowan.

Thursday Morning.

5. SURGICAL SECTION.

Dr. F. W. Birtch, San Francisco: Surgical risk from the standpoint of group study.

GROUP STUDY IN THE ESTIMATION OF SURGICAL RISK.

By FAYETTE WATT BIRTCH, M. D.

(a) The consideration of surgical risk in its broader aspect, such as mortality, morbidity, delayed recovery, complications, etc.

(b) The consideration of the mistakes in diagnoses as being responsible for the medical profession's shortcomings in being able to forecast the outcome of an operation,—as based upon the reports from literature in autopsy findings, operative descriptions and the results from treatment.

(c) A presentation of a scheme for estimating the surgical risk,—from the statistics of the Diagnostic Section of St. Luke's Hospital.

(d) The conclusion will bring out the probable effect such groups will have on the future of surgery.

Dr. A. B. Cooke, Los Angeles: Exophthalmic goitre; indications for surgical interference, choice of procedure.

EXOPHTHALMIC GOITRE—INDICATIONS FOR SURGICAL INTERVENTION—CHOICE OF PROCEDURE.

By A. B. COOKE, M. D.

This discussion limited to exophthalmis goitre or Graves' disease. Hyperthyroidism and thyrotoxicosis preferable designations, since exophthalmos not a constant or essential feature. Always to be considered a formidable disease with little tendency to spontaneous recovery.

The factors of danger in hyperthyroidism; how death is caused.

The heart the most important guide in determining the line of management. If improvement not at once apparent under hygienic and medicinal treatment, surgical intervention to be considered. This to be resorted to early, since the danger rapidly increased with delay. Many cases lost which might be saved by prompt surgery.

In deciding upon the surgical procedure each case to be judged on its own merits. Experience the only safe guide. Important to bear in mind Crile's dictum that 'it is the first surgical contact which kills these patients.'

In favorable cases always desirable to adopt at once the curative procedure, i. e., lobectomy. When this involves too great hazard, ligation of the superior thyroid arteries should be done and the radical operation deferred until the improvement warrants it. The injection of boiling water has nothing to commend it.

Anoci-association offers the safest method for handling these cases.

Dr. Leo. Eloesser, San Francisco.

AMPUTATION STUMPS AND ARTIFICIAL LEGS.

By LEO ELOESSER, M. D.

Requirements of stumps; physiological stumps, end-bearing and side-bearing; pathological stumps, pain, ulceration, atrophy; causes, neuromas, periostitides, scars, insufficiency of skin and soft parts, atrophy of disuse; prophylaxis; treatment of bone and soft parts at primary operation; treatment of neuromas, ulcers, periostitides; stump-plastics.

Artificial legs: How the leg carries the wearer, end-bearing and side-bearing stumps; how the wearer carries the leg; suspension of leg after Dollinger, suspension from shoulder-braces and belts.

Dr. Stanley Stillman, San Francisco.

TUMOR OF THE CAROTID GLAND.

By STANLEY STILLMAN, M. D.

A brief résumé of cases previously reported.

A consideration of the mortality following ligation of the common carotid, which has usually been done in the removal of this growth.

Report of a case of successful removal without ligation of either common or internal carotid.

Report of two other cases; one with ligation of the common carotid with a fatal termination; the other with ligation of the common carotid with recovery of the patient.

Dr. Clarence Moore, Los Angeles.

DIVERTICULUM OF THE DUODENUM.

By E. C. MOORE, M. D.

Report of a case; literature on the subject; lantern slide exhibit.

Dr. Thomas G. Inman, San Francisco: Some important factors in diseases of peripheral nerves.

SOME IMPORTANT FACTORS IN DISEASES OF PERIPHERAL NERVES.

By DR. THOMAS G. INMAN.

Causation:

A. Individual vulnerability.
   1. Radical and familial tendencies often not definitely ascertainable; phylogency of peripheral nerves, an unknown factor in their diseases.

B. Toxic influences.
   1. Poisons introduced from without.
   2. Poisons formed within the body.
      a. Bacterial.
      b. Metabolic.

C. Physical causes.
1. Nutrition.
2. Temperature.

Pathology and Distribution:

A. Radiculitis sometimes not to be distinguished from an affection of the peripheral nerve which carries the fibers of the affected root.

B. Posterior root; ganglionitis more often the cause of nerve disturbances than is generally supposed.

C. Elective disturbances of various types.

Prognosis:

A. Depends upon the nature and amount of pathology present and the ease or difficulty of removing the cause; course often necessarily long and this fact must be impressed upon the patient at the beginning of treatment.

B. Detrimental influence of coincident diseased conditions.

Treatment:

A. Removal of cause of this can be determined and care of all conditions which mitigate against recovery.

B. Care of focal infections, arterio-sclerosis, etc.

C. Counter irritation.

D. Massage.

E. Heat; diathermia.

F. Improvement of general condition.

Incidence of peripheral nerve disturbances and causative factors in 300 cases completely examined.

5-B. MEDICAL SECTION.

Dr. A. W. Hoisholt, Napa: Motor phenomena in certain classes of insanity demonstrated by moving pictures.

MOVING PICTURE STUDIES OF THE MOTOR PECULIARITIES OBSERVED IN STEREOTYPIC AND KINDRED MUSCULAR MOVEMENTS IN FORMS OF DEMENTIA-PRAECOX, AND IN THE MOVEMENTS OF HUNTINGTON CHOREA.

By A. W. HOISHOLT, M. D.

Synopsis:

1. The nature of negativism and the manner in which it is reflected in muscular movements; stereotypy in posture and movements; case histories; kinetoscopic demonstration of the manner in which the repetition of certain more or less complicated muscular movements, varying in form and duration, are interrupted by statue-like crystallizations, leading to manifestations of phases and pauses.

2. Kinetoscopic pictures of the peculiar, irregularly jerky, large excursioned movements of trunk and extremities in two women patients presenting symptoms of an advanced stage of Huntington chorea.

Dr. J. Henry Barbat, San Francisco: Permeability of the meninges to arsenic in paresis and tabes.

PERMEABILITY OF THE MENINGES TO ARSENIC IN PARESIS AND TABES.

By J. HENRY BARBAT, M. D.

Previous work would indicated that meninges are almost impermeable to arsenic. By author's technic, arsenic can be demonstrated in almost all cases, 24 hours after its intravenous administration. Technic; report of cases; advantage over Swift-Ellis method.

Dr. Herbert C. Moffitt, San Francisco: Ulcerative colitis.

ULCERATIVE COLITIS.

By H. C. MOFFITT, M. D.

Introduction to deal with a short sketch of the occurrence of entamebic and bacillary dysentery in California. Mention only of the ulcerative colitis of diphtheria, nephritis, tuberculosis, intoxications.

Clinical picture of ulcerative colitis here considered:

1. Type with superficial hemorrhagic erosions and shallow ulcers; secondary anemia and occult blood in stools sometimes the only clinical symptoms.

2. Type with fever, wasting and other symptoms of a general infection with few local symptoms.

3. Type with deep ulceration, marked local symptoms and secondary stenosis of the gut; frequent limitation to short segments of the colon, especially the upper rectum.

4. Chronic type often affecting a small portion of the colon without symptoms until stenosis occurs; peculiar local extension of this process even after resection of portions of the bowel; polyposis frequently associated with other hypertrophic changes in the gut.

5. Acute or chronic types with diarrhea, cachexia and frequent fatal termination associated with ulceration, superficial or deep, throughout the colon; difficulty of separating this type from chronic amebiasis.

6. General clinical résumé of the affection, literature and case reports; pathology, bacteriology, pathological specimens; medical treatment, local and general; surgical treatment by appendectomy, colostomy, resection.

Dr. Samuel H. Hurwitz, San Francisco: On the treatment of hemorrhagic conditions.

METHODS OF STUDYING THE HEMORRHAGIC DISEASES.

By SAMUEL H. HURWITZ, M. D.

Brief consideration of the normal factors concerned in the clotting of blood in health and their variations in disease.

Discussion of an etiologic classification of hemorrhagic diseases based upon some abnormality existing in one of the factors concerned in the clotting of blood in health.

A consideration of the more important clinical methods now available for the study and classification of this group of disease with special emphasis upon those methods whose simplicity render them clinically useful.

Brief discussion of a rational and critical therapy for the constitutional treatment of the hemorrhages observed in bleeding conditions with special reference to the knowledge gained from a study of these conditions by present day methods.

Dr. W. H. Strietmann, Oakland: Magnesium sulphate intravenously in various septicaemias.

MAGNESIUM SULPHATE INTRAVENOUSLY IN BACTERAEMIA.

By W. H. STRIETMANN.

Synopsis: Review of Harrar's work, and method; effect on animals of magnesium sulphate alone; author's modification and difference in effect following its use; case reports of Syreptococcus, Viridans, Streptococcus, Hemolyticus Colon, and Influenza Bacteremias; theoretical possibilities as to mode of producing effect. Conclusions.

Dr. Jau Don Ball, Oakland: The relation of medicine to criminology.

THE RELATION OF MEDICINE TO CRIMINOLOGY.

By JAU DON BALL, M. D.

Synopsis: Definitions; Examination of the Criminal; Medical Causes of Crime; Sociological, Neurological and Serological Aspect of Prostitution; Discussion of Interrelationship of Crime and Prostitution and Their Connection with Medicine; the Juvenile Delinquent; Prophylactic Measures.

Thursday Afternoon.

6. SYMPOSIUM ON FUNCTIONAL PATHOLOGY.

Arranged by Dr. Fitch C. E. Mattison.

PATHOLOGICAL PHYSIOLOGY—ITS RELATIONSHIP TO INTERNAL MEDICINE.

The Relation of the Vegetative Nervous System to Internal Disease. F. M. Pottenger, Monrovia.

Vegetative nervous system composed of two antagonistic divisions; sympathetic and greater vagus; normal action holds equilibrium in all internal viscera; disturbance in either division produces functional derangement; relation of symptomatology in internal disease to vegetative system; relationship to the internal secretions.

The Relation of the Endocrine Glands to Functional Disorders. Henry R. Harrower, Los Angeles.

Many if not all metabolic disorders have as their fundamental pathology a disturbed function of certain of the glands of internal secretion. The study and treatment of the so-called "chronic" diseases is made doubly profitable if the functional capacity of the thyroid, adrenals, pituitary and gonads is investigated. The thyroid, especially, is concerned with many every-day disorders from colds to neurasthenia.

The Pathological Physiology of the Thyroid.
Clarence Toland, Los Angeles.

The Relation of the Hypophysis to the Disorders of Nutrition. W. W. Roblee, Riverside.

Brief statement of facts concerning the physiology of the gland; the pathology underlying hyper and hypo-pituitarism; report of case of hypo-pituitarism, showing great improvement under treatment.

Metabolism and Disease. Lorena M. Breed, Pasadena.

Chemical composition of body; body processes; chemical substances which increase protein metabolism; substances which depress protein metabolism; results of altered chemical processes in the body.

6-B. MEDICAL SECTION.

Dr. John Carling, Los Angeles: Infantile paralysis.

THE TREATMENT OF INFANTILE PARALYSIS.

By JOHN CARLING, M. D.

Acute Stage. Proper treatment minimized damage to muscles. The importance of orthopedic measures to prevent deformity.

Sub-Acute Stage. Danger of overstraining weakened muscles. Measures to restore lost power.

Chronic Stage. Correction of deformity, if present. Measures to restore balance of muscular power and stability of joints.

Post-operative treatment to strengthen transplanted muscles and train them to co-operate with others.

Dr. Rachael Ash, San Francisco: Mongolian idiocy.

MONGOLISM.

By RACHEL L. ASH., M. D.

Langdon-Down, in 1866, first described that variety of congenital imbecility which bears a certain physical resemblance to the Mongolian race.

Mongolism occurs in all countries. It forms five to eight per cent. of the feeble-minded in institutions. As the great majority of these imbeciles, owing to their lack of resistance to pulmonary and kindred disorders, die in early childhood, their actual number must be very much greater.

These children, in more than fifty per cent. of the cases, are the last born of repeated pregnancies, where one or both parents approach or are in the fourth decade. Hence, we may consider sexual exhaustion—functional disturbance of the reproductive organs and their related glands of internal secretion—as the great etiological factor.

As dentition, locomotion and speech are very much retarded, mongolism must be carefully differentiated from cretinism, rachitis, amyotonia congenita and chondrodystrophy.

(To be given in connection with lantern slides.)

Dr. Langley Porter, San Francisco:

THE USES OF EIWEISS MILK: A CLINICAL STUDY.

By Langley Porter, M. D., and Florence Holsclaw, M. D.

1. Diarrheas in infancy; their etiology.
2. Classifications of Diarrheas.
   Etiological—clinical.
3. The conception of diarrheas as phases of metabolic disturbances.
4. The Finkelstein classification of metabolic disturbance with a special reference to dyspepsia.
5. The Milch Naehr Schaden of Czerny. Its origin in putrefactive processes in the bowl.
6. Finkelstein's idea that putrefaction may be utilized to combat fermentation.
7. The factors that encourage putrefaction; (a) high protein; (b) high fat; (c) high salts; (d) low carbohydrates, preferably maltose; (e) absence of lactose.
8. The chemistry—high calcium soap production. Low fatty acid production.
9. The elaboration of Eiweiss Milch; (a) the early formula; (b) the disastrous results of restricting sugar. Finkelstein's change of view.
10. The N. Y. Baby Hospital Modification.
    The salt water washing.
    The addition of fat in refractory cases.
    Value in infectious cases.
    The need for either hygienic and therapeutic measures.
    Illustrative cases.

Dr. John Colliver, Los Angeles:

THE LIVER FUNCTION IN CHILDREN.

By JOHN A. COLLIVER, M. D.

Research work in Prof. von Pirquet's Kinderklinik, Vienna, based on ingestion of from 10 to 80 grams of galactose in 65 pathogenic and 50 normal children; method; amount and time of elimination in each case; qualitative test, urobilin, bile pigment and aldehyd; quantitative sugar with polaroscope; tabulation of normal cases; icterus-haemorrhagica; chlorosis; tuberculosis, etc. Conclusion.

Camphor Elimination in Children.

Research work in Prof. von Pirquet's Kinderklinik, Vienna, based upon ingestion of from 1 to 2 grams of camphor in 16 normal and 10 pathogenic cases. Method; amount and time of elimination; orcin test; naphthoresorcin test; phloroglucin test; quantitative camphor elimination by polaroscope; tabulation and conclusion.

Dr. E. Fleischner, San Francisco: Some problems in starch digestion in childhood.

SOME PROBLEMS IN STARCH DIGESTION IN INFANCY AND CHILDHOOD.

By E. CHARLES FLEISCHNER.

1. Frequency of starch intolerance.
2. Physiology of carbohydrate digestion.
3. Symptom-complex of starch disturbances.
4. Possible factors determining disturbances in the physiology.
   (a) Abnormal ferments.
   (b) Abnormal peristalsis.
   (c) Abnormal bacterial flora.
5. Stool examinations as a means of determination.
6. Test diets as a means of determination.
7. Normal carbohydrate diet in infancy and childhood.
8. Variations from normal in disturbances of digestion.

Dr. H. H. Yerington, San Francisco:

THE VALUE OF THE WASSERMANN TEST IN THE NEWLY-BORN. (With a report of 1021 Infants.)

By H. H. YERINGTON, M. D.

1. Blood Findings in the newly-born.
   A. Large percentage of Positive Wassermann findings in cord bloods.
   B. Value of heel-blood examinations.
2. Points to be considered in the work.
   A. Type of cases.
   B. Reliability of blood work and technic.
   C. Tests on mothers, fathers, children.
   D. Histories, autopsies, placental pathology.
3. Comparisons of the bloods of mothers, fathers and infants.
4. Placental pathology.
   A. Positive and suggestive cases.
   B. Still-births and abortions in relation to placental findings.
5. Follow-up work.
   A. Observation of suggestive infants after delivery.
   B. Comparison of later blood tests with those made at birth.
6. Conclusions.

EYE, EAR, NOSE AND THROAT SECTION.

Arranged by Hans Barkan.

Program of the Eye, Ear, Nose and Throat Section of the California State Medical Society.

Tuesday Afternoon.

"Report of a Case of Deafness of Seventeen Years' Standing, With Seeming Recovery," Dr. H. Staats Moore, San Francisco.

"Congenital Occlusion of the Nose—Original Method of Operating," Dr. Harvard McNaught, San Francisco.

"Headache and Secondary Systemic Disturbances Caused by Intra-Nasal and Nasal Sinus Condition," Dr. Adolph Baer, San Francisco.

"Malignancy of the Middle Ear and Mastoid," Dr. F. A. Burton, San Diego.

Wednesday Morning.

"Some New Points in the Technic of the Submucous Resection," Dr. F. M. Shook, Oakland.

"What Can We Do to Improve Our Business Methods?" Dr. P. A. Jordan, San Jose.

"A Case of Congenital Aniridia as a Familiar Sequence," Dr. Walter Scott Franklin and Dr. E. F. Glaser, San Francisco.

"Report of an Unusual Ear Case," Dr. C. F. Welty, San Francisco.

Wednesday Afternoon.

"Tuberculosis of the Eye," Dr. Philip H. Pierson, San Francisco.

"Laryngectomy Indications and Technic," Dr. H. B. Graham and Dr. L. C. Draper, San Francisco.

"An Ideal Intracapsular Extraction for Cataract," Dr. Lloyd Mills, Los Angeles.

"End Results in the Treatment of Ozena by Means of Vaccine," Dr. Henry Horn, San Francisco.

Thursday Morning.

"Lantern Slide Exhibit of Eye Cases with Comments on Diagnosis and Treatment," Dr. Hans Barkan, San Francisco.

"Report of a Case of Otitic Meningitis," Dr. Edward Cecil Sewall, San Francisco.

"A Study of Auto-Sero Therapy in Certain Eye Diseases," Dr. Wm. F. Blake and Dr. W. T. Cummings, San Francisco.

"Clinical Observations of Cataract Operation," Dr. John J. Smith, San Francisco.

Thursday Afternoon.

"The Invisible Spectrum as an Ocular Irritant," Dr. T. C. Pounds, San Diego.

"Otosclerosis of the Ear," Dr. M. W. Fredericks, San Francisco.

Not Received, Dr. C. M. Hosmer, San Diego.

"A Study of Auto Sero Therapy in Certain Eye Diseases," Dr. Wm. F. Blake and Dr. W. T. Cummings, San Francisco.

Abstract:

Intravenous inoculations of animals with bacterial suspensions to determine any selective tendency toward infection of eye tissues.

A study of certain common eye lesions to determine if they are toxic or infectious in origin.

A study of us of auto serum,—subconjunctival injections—its apparent effect, and histological study of reactionary process in tissues of eye.

"What Can We Do to Improve Our Business Methods?" Dr. P. A. Jordan, San Jose.

Abstract:

One physician to every six hundred people in the United States. An increasing number of specialists. Very few doctors of old school; nearly all doctors now enter the field as a business, productive of a livelihood. Majority of doctors die in poverty, and before ripe old age. Thinks only of the malady of patient; often a near-failure as to business methods of his office; and generally an unwise investor. Lack of business training dates back to his Alma Mater, which gave not a hint as to business application of scientific knowledge so generously offered.

"Report of a Case of Deafness of Seventeen Years' Standing, With Seeming Recovery," Dr. B. Staats Moore, San Francisco.

Abstract:

This is a report of a recovery of a reported deaf ear—the deafness caused by an accident when very young—followed by years of deafness and without any cause—a return of hearing—he had been examined by a number of men some years past and told his hearing would never be recovered.

"Malignancy of the Middle Ear and Mastoid," Dr. F. A Burton, San Diego.

Abstract:

Introduction—condition rare, probable reasons for its infrequency.

Review of Literature:

Report of a case occurring in author's practice, of epithelioma, probably beginning in middle ear, the extent of its involvement, microscopical report of pathologist, micro-photographs and post mortem findings.

"The Invisible Spectrum as an Ocular Irritant," Dr. T. C. Pounds, San Diego.

Abstract:

The forms of radiant energy under discussion are found beyond the two extremes of the visible spectrum and consist principally of the Infra-red, or dark heat rays, and the Ultra-violet or chemical rays.

A brief consideration of their properties show them capable of effecting the tissues both superficially and by penetration, especially when the exposure is prolonged or excessive. These facts have been demonstrated experimentally and clinically. Many of the conditions of the eye due to exposure to light are analogous to those produced in the skin.

A comparison of the light from different sources—from the blue sky to incandescent tungsten—shows a variable content of these rays, the amount existing in the electric arc and the tungsten lamp being excessive. These rays play an important part in the production of that train of symptoms or rather conditions going to make up what is known as snow blindness, and a similar affection of the eyes, found in those recently exposed to tropical light, as well as the electric ophthalmia of varying degree which is being encountered with increasing frequency and which is really taking a place among the occupational diseases.

The fact that several cases of asthenopia met with during the past two or three years were not relieved entirely by the proper fitting of glasses but were ultimately remedied by the use of methods to reduce the amount of invisible rays entering the eye is fairly conclusive evidence of their harmful effects.

"Clinical Observations of Cataract Operations," Dr. John J. Smith, San Francisco.

Abstract:

This paper is a treatise on determining whether a preliminary iridectomy should be performed before attempting an extraction.

Careful consideration is given to a description of the conditions which may be present in the affected eye from which the writer draws his conclusions as to whether he will perform the ordinary cataract operation, the Hess operation, the Homer Smith operation, or the Smith-Indian operation.

Mention is made also of his success in treating immature cataracts by absorption methods.

"Some New Points in the Technic of the Submucous R-section," Dr. F. M. Shook, Oakland.

Abstract:

The Submucous Resection of the Nasal Septum. Indications for and technic.

I. Impaired respiration of nasal origin.
   1. Causes.
   2. Results.
      a Tubo—tympanic inflammation.
      b Chronic catarrhal Otitis.
      c Impaired sinius drainage with resulting pathological changes.
      d Reflex conditions.
         Asthma and spheno palatine ganglion neuralgia.

II. Technic.
   1. Anesthetization.
      a Author's method.
   2. The incision.
   3. Methods of elevation of the mucosa.
   4. Resection of the cartilage—a safe method with no danger of dislocation of the cartilage.
   5. A safe method of isolating the bony septum from danger areas.
   6. Dissection and removal of nasal spine.
   7. Removal of nasal ridge.
   8. The cutting and suturing of the mucous membrane flap.
   9. The post-operative packing.
      Illustration of technic with anatomical preparations.

"A Case of congenital aniridia as a Familial Sequence," Dr. Walter Scott Franklin and Dr. W. E. Glaser, San Francisco.

Abstract:

Mrs. ——, twenty-three years of age, double-sided aniridia, eyesight poor since childhood. Right eye shows opacities in lense and excavation of nerve-head. Left eye marked corneal opacities. Tension increased in both eyes; vision markedly reduced. Mother blind, grandfather blind, one sister confined in blind asylum in British Columbia (have not yet received notes on her case). Parents' two-year-old baby has double-sided aniridia.

"Headache and Secondary Systemic Disturbances Caused by Intra-Nasal and Nasal Sinus Conditions," Dr. Adolph Baer, San Francisco:

Abstract:

A review of Oro, Naso, Pharyngeal conditions frequently overlooked as possible etiological factors in production of headache. In the mouth caries; pyorrhea; pericementitis; acute abscesses; chronic abscesses at the root of apparently healthy teeth; pulp stones; unerupted and impacted teeth; necrosis of maxillary bones; neoplasms at base of tongue; salivary cysts and calculi. In the pharynx, purulent tonsils and adenoids; and postnasal fibromata; in the nose deviated septa, hypertrophied

turbinates, hypertrophies of septum tuberculi, uncinate process, bulla ethmoidalis, polypoid degenerations and purulent suppurations in the antrum, frontal, ethmoid, and sphenoid sinuses.

Abstract: Dr. Baer (con.).

Acting either as sites of fecal infection producing headaches by auto-intoxication, or by pressure causing reflex and referred nerve pains.

"Report of an Unusual Ear Case," Dr. Cullen F. Welty, San Francisco.

Cerebral complications always require the most careful consideration.

The differential diagnosis between brain abscess, meningitis and infectious sinus thrombosis are not easily made.

Again, there are other conditions that may arise during the course of an acute mastoiditis that may make such a diagnosis impossible. Therefore, everything should be done to clear the field, as a life hangs in the balance.

"Congenital Occlusion of the Nose—Original Method of Operating," Dr. Harvard McNaught, San Francisco.

Abstract:

Causes of congenital occlusion. Rarity of condition. Brief review of development of nose in foetal life. Operative measures in use for relief of condition and their defects. Report of author's case. Description of an original method of operation for correction of this condition.

"Report of a Case of Otitic Meningitis," Dr. Edward Cecil Sewall, San Francisco:

Abstract:

Patient presented clear picture mastoid abscess. Streptococcus mucosus type. No discharge from the ear for three months and then questionable. Symptoms of meningitis. Spinal fluid under pressure, great increase in leucocytes in spinal fluid, polymorphonuclear type, nystagmus. Mastoid operation. Disappearance of nystagmus. The cell count at repeated daily examinations of spinal fluid showed steady decrease in cells; exitus. P. M. showed no evidence of path of infection to meninges. Histological examination of temporal bone.

"Otosclerosis of the Ear," Dr. M. W. Fredericks, San Francisco.

Abstract:

Grouping of several disease conditions under the same name. The importance of an exacter pathology, and importance of making a differential diagnosis between otosclerosis and similar conditions. Difficulty of obtaining and preparing anatomical specimens. Great length of time necessary to properly observe a case. Importance of recognizing the disease early in life, when it might still be amenable to treatment. Frequency of the disease, and economic necessity of finding some effective treatment. Role of heredity. Small value of methods of treatment that have so far been employed. Radium of no value except to kill the acoustic in cases of intolerable head-noises. Other drugs tried, and their value. Mechanical methods. X-ray treatment.

Not received. Dr. C. M. Hosmer, San Diego.

"Lantern Slide Exhibit of Eye Cases with Comments on Diagnosis and Treatment," Dr. Hans Barkan, San Francisco.

Abstract:

The pictures shown are of some rarer forms of eye and nervous lesions, and of a series of the more common eye affections; they are shown mainly to bring out discussion in treatment pursued by the members of section, it being the belief of writer that a discussion of various methods of treatment of the common ocular maladies might be of mutual benefit.

Tuesday, April 17, 1917, 2 P. M.—Section on Urology.

Arranged by Dr. V. G. Vecki.

Dr. T. G. Clark:

Some Dermatological Case Reports, Thomas J. Clark, M. D.

Mycosis Fungoides.

Acute Lichen Planus in a Negro.

Licen Infantum.

Leprosy in Children.

Herpes Gestationis.

Chancre of the Tonsil Originating in a Dentist's Office.

Pemphigus Neonatorum.

Pyelitis of Pregnancy, Dr. A. B. Ceeil.

Etiology and Treatment of Frequency of Urination in Women, Dr. Wm. E. Stevens.

Chairman's Address, Dr. V. G. Vecki.

Wednesday, April 18, 1917, 9:30 A. M.

Dr. Ralph Williams, Los Angeles.

Dr. Granville MacGowan, Los Angeles.

An Analytical Study of 47 Perineal Prostatectomies, Dr. Frank Hinman, San Francisco.

Thursday, April 19, 1917, 10 A. M.

Moving Pictures of Suprapubic Prostatectomy, Dr. W. B. Dakin, Los Angeles.

PROGRAM FOR SESSION ON OBSTETRICS AND GYNECOLOGY.

Dr. A. B. Spalding, Secretary.

Morning Session.

1. Care of Functioning Breasts, Dr. Frank C. Ainley.
2. Obstetrical Anesthesia, Dr. Caroline B. Palmer.
3. Backward Displacement of the Uterus, Dr. Thos. A. Burger.
4. Emphysema Complicating Labor With Report of a Case, Dr. Dudley Smith.

Afternoon Session.

1. Election of Officers.
2. Vesical Vaginal Fistulae, Dr. Chas. P. Thomas.
3. Symposium on Cystocele.
   (a) New Method of Plastic Surgery in External Tears and Hernial Conditions in the Female Bladder and Urethra, Dr. Henry P. Newman.
   (b) Anterior Vaginal Relaxation With Special Reference to Incontinence of Urine, Dr. J. Craig Neel.

NEUROLOGICAL SECTION.

Arranged by A. W. Hoisholt.

Spinal Cord Changes in Combined Sclerosis, by Walter F. Schaller.

Based on a consideration of the pathology in four cases of Combined Sclerosis microscopically examined, the cord symptoms of this disease are explained and the diagnosis of the condition discussed in a review of a number of additional cases seen clinically. Cord sections and certain clinical symptoms are illustrated by lantern slides.

A Discussion of the Failure of Abdominal Surgery and Other Common Therapeutic Agents to Relieve Pain and the Other Symptoms of Disease of the Vegetative Nervous System, by Dr. Thos. J. Orbison, Los Angeles.

Symptomatic Psychoses, by Charles Lewis Allen, M. D.

Synopsis:

Relation between physical health and normal mental processes.

Abnormal mental manifestations observed in serious physical illnesses.

Material—Los Angeles County Hospital. Its Study. Conclusions.

Study and Charting of Personality, by V. H. Podstata, M. D., Lecturer in Psychiatry, University of California.

The author seeks to systematize the study of Endowments, Capacities and Traits of personality and to record them graphically by means of charts.

His first object is to aid in the early recognition of deviations towards abnormal reaction types, the second to establish more definitely the influence of heredity and acquired causes upon the molding of personality.

Various abnormal types of personality are presented by the author by means of his charts.

His studies have been made both on children and adults.

regard to caries of the bony parts, and cholesteatomy which play such important parts in the pathology.

I have a patient who had chronic purulent otitis of both ears and who filled them full of pure carbolic by mistake. He did not neutralize and was burned frightfully, the eschar extending even "through the custachian tubes into the throat." He has recovered from his burns but still has his otitis purulenta.

H. B. Graham, M. D.: It is quite possible that carbolic acid may cure quite a number of cases of middle ear suppuration, and it is not anything very new, although it has not been practiced very much. Dr. Cross of San Francisco, a general practitioner, for fifteen years has used pure carbolic acid and a mixture of carbolic acid and balsam of peru, and makes in his laboratory a solution known as "healoil" which he recommends very highly for chronic suppurative ear conditions. Possibly carbolic acid may cure a great many of these ears. We must remember we are dealing with a disease rather insidious in its action, and it requires a large amount of attention over a long period of time, in order to know the exact pathological condition present. The processes may have a syphilitic or tubercular basis, or be an extensive cholesteatoma, and the only evidence we have of the destruction going on is a slight intermittent discharge. This continues until we are faced with a meningitis, and we wake up to the seriousness of the situation.

This pathological condition must be eradicated. Even if we use carbolic acid, we can only wash the surface no matter how you do it. There is no possible way of knowing when you have or have not a case of cholesteatoma of the middle ear. I have washed the cases out, and later put the solution under the microscope without discovering the cholesterin crystals, and still have operated and found a cholesteatoma. I think it is a dangerous proposition to encourage a treatment of this character by the specialist, and place it in the hands of the general practitioner, in cases so dangerous to the life of the patient. I think it is far better for one to treat his case by operative measures than by conservative means, if it is a case that needs operation.

C. F. Welty, M. D.: Before starting this discussion I wish to say that a suppurating ear is not chronic until one year has elapsed.

The doctor reported cures in eight consecutive cases of chronic suppurative otitis media, by the injection of pure carbolic acid. In fact every case that he selected and treated was cured of the discharging ear. This is indeed revolutionary.

Dr. Walker further states that he puts the carbolic acid in the middle ear under pressure; again this is revolutionary. I have long been taught that no kind of solution should be put in the middle ear under pressure for various reasons. But when you come to carbolic acid, it does seem to be the limit; furthermore, to follow it with alcohol was well.

On the other hand, we must admit that alcohol and carbolic acid are both very good antiseptics and might destroy any kind of infection that they came in contact with, leaving a more healthy granulating surface than there was before the treatment. However, I am not ready to try the experiment and would consider it very dangerous.

The only way I treat chronic suppurative otitis media is by washing with the intra tympanic cannula, using principally 1-3000 bichloride solution and boracic acid solution, drying well afterwards. I have treated cases for months this way with irrigations every other day. I have finally come to the conclusion that in my selected cases I will not treat longer than three weeks, and if I do not have an appreciable betterment I will advise operation, and that operation is dependent upon the pathology found at operation. This brings me up to the pathology of chronic suppurative otitis media.

I can hardly recall a case of chronic suppurative otitis media, operated by myself, in which the pathology was of such a nature that it could not be demonstrated six or eight feet away. I do not recall a case in which the pathology was alone confined to the attic, and in fact these are the only cases that might be so treated, and they will not subside with single or multiple injections of carbolic acid or anything else. When we come to extensive caries, of the mastoid cells, that would hold half an ounce of fluid, or other cases of granulations covering the sinus, middle or posterior fossa, and not least, but last, cholesteatoma which does not yield to anything but the chisel. Again, tuberculosis, according to Doctor Phillips of New York, forms 12% of all such cases. None of these conditions will be brought to a cure by any form of treatment. The whole procedure seems so impossible to me that I would not consider it at all.

It is my firm conviction that treatment by various medicaments are more dangerous than operations. In fact I have seen in consultation that many more cases die from non-operative interference than have died from complications that developed during or following operation.

M. W. Fredrick, M. D.: Dr. Walker's paper has raised so much discussion that it must be either very good or very bad. As most of the discussion has been unfavorable, I feel that some one should say something in favor of the author, as what he is bringing forward may be for the better, even though we others have not used it. I would like to have the doctor describe his method somewhat more in detail, tell how he produces the pressure he speaks of, and, above all, how he selects his cases, as it is obvious that the method is applicable in a limited number of cases only.

Dr. G. W. Walker, M. D., closing discussion: I am glad my paper has been given so much attention. I will try to answer the questions. As to Phillips' article in the Medical Record in 1900, he does not mention the use of carbolic acid with the syringe. I know Dr. Phillips well and have done quite a little work under his instruction. He says he applied pure carbolic acid on an applicator or sprayed part to be treated. Speaking of Seneca Powell washing his hands in carbolic acid and then in alcohol, he did more than that, he filled his mouth with carbolic and followed it with alcohol, to demonstrate his lack of fear of it.

Dr. Graham speaks of Dr. Cross' method. I believe he did not use the alcohol, so that is not a similar method at all. He did not even use pure carbolic, but a mixture.

Dr. Sewall spoke of the man who poured it into his ear by mistake. Possibly the suppuration was in a place the carbolic never reached. It doubtless had no opportunity to cure his infection.

This treatment should not be used by the general practitioner. If he wants to use it, he should take quite a little special instruction in the treatment of ears before attempting to use the treatment. It should be handled by a specialist. When I was a general practitioner, I was not familiar enough with the anatomy of the ear, or of how to apply treatment, and I would have been afraid to use this remedy in that region, nor would I have wanted to wash out the ear with bichloride. However, washing out the ear with bichloride never produced the results that carbolic acid does. Washing with bichloride cannot offer as good effect, and we do not want to wash about the meninges with bichloride. No general surgeon wants to wash out a peritoneal cavity with bichloride, yet they do use carbolic acid in limited extent there.

When carbolic is used under pressure, I think it should be in the hands of a specialist who has some idea as to how much pressure should be used. I used an ordinary Record syringe with a cannula that I use for frontal sinus work. I pack around the cannula after it is in position, using gauze or cotton. The pressure used need not be very great,

in fact it should be only great enough to reach the level needed. Dr. Welty says he fears there is danger to life in using this method. We all know we have cases of chronic ear suppuration that need operation, and we are unable to obtain consent to an operation. We know the life must be endangered if we cannot get rid of the disease. My first case was brought about because I could not obtain consent to do a radical mastoid operation. Dr. Welty speaks of my using it through an incision in the membrana as if he thought I advised it in intact membranes, but of course not in such cases, but possibly some cases might need an opening in a better location for reaching affected areas.

Dr. Trowbridge asked how much carbolic acid I used in the first case reported. I used about 6 c.c. of carbolic. I used it until I filled the cavity, so all parts of the cavity could be reached, the top as well as other parts. There may be quite a few who may use it in every case of chronic middle ear suppuration, but a proper selection of cases will give best results. I think after you have treated a case for two or three weeks, or a month, and have fixed up the nose and throat without improving the aural condition, you can tell when to use this treatment best. Where there is a cavity about the attic or antrum from which pus comes, or even throughout the tympanum, you either have to operate, or else do as much for the patient as you can without an operation, and if you use this method you will often avoid a mastoid operation.

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2 Politzer. A Text Book on the Diseases of the Ear, 1909.

UPON THE RADIOGRAPHIC DIAGNOSIS OF HYDRONEPHROSIS.*

By MARTIN KROTOSZYNER, M. D., San Francisco.

Until a few years ago pathological conditions of the kidney due to urine stasis in the renal pelvis were designated as hydronephrosis, of which, according to the character of the retention fluid, two main varieties, the aseptic and infected, form, were differentiated. The French school, upon Albarran's authority, accepted for the same conditions the terms uronephrosis and uropyonephrosis. Much diversity of opinion prevails in text books regarding the nomenclature of infected hydronephrosis. Many authors, most prominent among them Küster, comprise all renal infectious conditions, resulting in pus formation, and independent of their etiology, under the term pyonephrosis. Israel and his school, on the other hand, make a strict distinction between the term infected hydronephrosis, as the end product of aseptic urine stasis in the upper urinary tract, and that of pyonephrosis, which is to be reserved for the terminal stage of pyelo-nephritis, a condition due to hematogenous infection or some other inflammatory septic process. The same incongruity of nomenclature prevails with the term "Sackniere" of the Germans, which is used by some authors for the final stage of aseptic hydronephrosis, and by others for all varieties of retention tumors of the kidney, including pyonephrosis.

From the foregoing the conclusion is forced upon us that a clear conception of the underlying etiological factors of renal dilatation is still lacking. The nomenclature and pathological classification of these conditions is, obviously, in need of revision and correction.

Relief, though, from this chaotic disparity of classification and nomenclature seems to be close at hand. For, while we formerly were merely able to diagnose a far advanced or palpable dilatation of the kidney, which, as a rule, was the end-product of a long standing pathological process of mechanical nature, we are, to-day, enabled to determine the various degress of dilatation of the upper urinary tract from their incipient stages. This marked advance in our diagnostic armamentarium is, above all, due to the perfection of ureteral catheterization, a procedure which in trained hands, and carried out with the aid of the modern close vision cystoscope, is performed almost as easily, as aseptically, and as painlessly as catheterization of the bladder. It is, furthermore, due to the advent of the injected ureter-catheter, by the application of which the slightest anomalies of deviation and caliber of the ureteral tube are demonstrable on the plate. It is, finally, due to pyelography, which, if performed lege artis and under observation of due caution, represents a safe and exact diagnostic method. By the judicious and selective application of these diagnostic procedures we are, to-day, enabled to recognize incipient abnormalities of size and configuration of the hollow system of the upper urinary tract, which, if left alone, are known to result invariably in irreparable hydronephrotic lesions, and which, by proper means of prophylaxis and of timely measures of treatment, may be corrected or repaired. Thus the importance of the pyelographic study of mechanical lesions of the upper urinary tract becomes obvious.

It is not my object to discuss, in this connection, the indications, the technique and similar features of pyelography. I have, like others, reported, elsewhere, upon my personal experiences with the drawbacks and dangers of the method, and, since then, have tried to get along without its use, wherever the diagnosis could be established by means of less risky procedures. Meanwhile the technique of the method has been materially improved, as for instance by the use of less irritating and, at the same time, better shadow casting fluids (thorium nitrate solutions) and the indications for its applications have gradually become limited to such renal conditions, in which the diagnostic aid, derived from the method, would not be offset by undue risks to the patient. This is, though, particularly true of hydronephrotic lesions, where, on account of the dilatation of the renal pelvis, a certain amount of the shadow casting fluid can be injected without causing distress or injury, and in the early stages of which the diagnosis almost entirely depends upon the pyelographic recognition of the underlying cause. Thus, wherever, of late, I have applied pyelography in this type of cases, I have never observed on my patients untoward sequels of serious nature, except occasionally local pain, or a slight general reaction, characterized by a brief period of fever and malaise.

Indispensable for the correct interpretation of

* Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 20th, 1916.

pyelographic plates, as regards incipient hydronephrosis, is the differentiation of the cast of the normal renal pelvis and its hollow appendages from that of the mechanically pathological viscus. Here we are confronted with a difficult problem, the solution of which is still wanting on account of not being available on pyelography alone. The individual variability of size and form of the anatomical renal pelvis is a well known fact, and the renal pelvis, besides that, may be entirely missing or present an asymmetrical form.

A good pyelogram of a normal kidney should permit of a fair conclusion regarding its posture and location. The left kidney lies, normally, a little higher than its right-sided mate, the latter organ reaching from the 11th costal to the 1st lumber vertebra, while the left one, as a rule, is located 2 cm. higher. Thus, the 12th rib is crossed on the left by the renal pelvis and on the right side by the upper calices. Of the greatest differential diagnostic importance is the fact that the normal pelvis is empty and that it reacts against the injection of shadow casting fluids with severe pain. The pyelogram of the normal kidney, therefore, shows the hazily marked contours and dim shadows of the two perpendicularly located main calices and that of the small and slit-shaped pelvis, which in a smooth line runs into the pelvic portion of the ureter.

In beginning hydronephrosis, on the other hand, shadows of greater intensity are obtained, and the statement is ventured, that sharp pyelographic contours of the pelvic shadows are significant of dilatation. Of still greater importance is the ureteropelvic anastomosis, which, in beginning hydronephrosis, is marked by a more or less angular contour, while the pelvis itself assumes a sacculated form.

The diagnosis of incipient mechanical lesions of the hollow system of the kidney has been materially advanced by the investigations of F. Voelcker, who, since his pioneer work on pyelography, has indefatigably labored towards perfecting that method for the recognition of conditions of dilatation and infection of the renal pelvis. He first applied the ideas, long in use, to express mechanical impediments to bladder-evacuation, to mechanical lesions of the upper urinary tract. The normal bladder is entirely emptied with each urination, and in mechanical bladder lesions the urine quantity, remaining in the viscus after spontaneous micturition, or the so-called residual urine, expresses the degree of bladder insufficiency due to the existing mechanical impediment. Analogically the renal pelvis is, under normal mechanical conditions, completely emptied with each ureteral contraction, and every cystoscopist knows, evacuation of an appreciable amount of urine, after the arrival of the distal and of the ureter-catheter in the renal pelvis, to be significant of a pathological enlargement of that viscus. Thus the urine stagnating in the pelvis, on the basis of a mechanical lesion, represents the residual renal urine, its underlying condition is called renal retention and, according to the ability of the pelvis to get rid, spontaneously, of a certain amount of its retained renal secretion, incomplete and complete renal retention may be differentiated.

Aside from determining the amount of residual renal urine, the quantity of fluid which the renal pelvis is able to hold comfortably, or its so-called capacity, must be ascertained. Systematic investigations on the cadaver, done by Zondek, have proved the capacity of the normal anatomical renal pelvis to be very small, amounting to about 1cc in the average and not exceeding 2 cc. By similar measurements on the living subject the capacity of the surgical pelvis of the kidney, i. e., of the pelvis and calices, is determined. For practical purposes, the capacity of the surgical renal pelvis is ascertained by passing a ureter catheter to the pelvis, ridding that viscus, by these means, of residual urine it may contain, and then measuring the quantity of fluid required for filling, until pain ensues. Voelcker found the capacity of the normal surgical renal pelvis, determined in this manner, to vary between four and six cc. and he is inclined to consider higher values as significant of pathological dilatation, while other authors, particularly Braasch, assume a wider margin for normal renal capacity (up to 20 cc.). It is safe, though, to assume that a renal capacity above 10 cc. lies outside the normal limits.

On the basis of the general acceptance of these essential points, concerning the mechanical and pyelographic characteristics of the normal pelvis and its incipient pathological dilatation, several distinct types of mechanical renal lesions of more advanced character can be differentiated. According to my own observations, the most important types are:

1. Dilatation of the renal pelvis alone, without that of calices. This type is characterized by an enlarged and sacculated shadow of the pelvis, around which, laterally, are grouped the small wart-like shadows of the various calices.

2. Dilatation of the anatomical pelvis, including that of calices. The pyelogram in this type presents, laterally, from the enlarged and sacculated pelvis-shadow, round or berry-shaped shadows of several calices.

3. Dilatation of calices without that of the anatomical renal pelvis. The calices in this type show enlarged, irregularly shaped or round forms, while the pelvic shadow appears to be of normal size.

4. Sacculation of the whole kidney (Sackniere). As characteristic pyelographic features of this type we note, that the shadows of calices exceed in size that of the pelvis, while the connective links between calices and pelvis are broadened, until in the complete sack-formation of advanced hydronephrosis (Sackniere) one uniform huge shadow, comprising pelvis and calices, appears on the plate.

We were used, until lately, to base indications for operative procedures on the kidney, almost solely, on the evidence furnished by the so-called functional diagnosis. For many renal affections, though, especially for those which are not likely to be benefited by radical operative measures, like stone-kidneys, renal infections of various origin,

and conditions of dilatation of the upper urinary tract, the treatment is much better determined by the exact anatomical diagnosis, which is feasible on the basis of pyelography. By this anatomical diagnostic method par excellence we are, at present, able to obtain pictures of the cast of the renal hollow system that are as clear and precise as specimens prepared by the surgical pathologist. From the perfection of this method, as regards simplicity of technique, painlessness and safety, depends the solution of the problem of "mechanics," which pervades the diagnosis of renal infections, and in which therapeutic measures, in order to be effective, must be based on the recognition of incipient stages.

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SOCIETY REPORTS

IN MEMORIAM.

The Fresno County Medical Society learns with profound sorrow of the very sudden and untimely death of its distinguished and beloved State Secretary, Dr. Philip Mills Jones, who departed this life, after a short illness, on November 27, 1916. This society desires to place on record its appreciation of his efficient and loyal service to the State, his uniform courtesy and kindly counsel in all business relations with this society. And

Whereas, Death has removed from the ranks of the medical profession of this State, a most ardent and faithful laborer for the advancement and promulgation of honest medicine; his valuable services in "Medical Defense" and higher standards in medical education, should receive due evidence of our appreciation and profound respect for his memory; therefore, be it

Resolved, That in the death of Dr. Philip Mills Jones the profession of medicine has lost a valuable member; the younger members an inspiration and example, and the State Medical Society a secretary whose place it will be hard to fill; and be it further

Resolved, That a copy of these resolutions be spread on our records and be printed in the California State Journal of Medicine, and be presented to the Council of the State Medical Society.

(Signed) GEO. H. AIKEN,
L. R. WILSON.

MENDOCINO COUNTY.

At the call of the President, Dr. Lester C. Gregory, a meeting was held at Fort Bragg on December 16th in the residence of Dr. Gregory. This being a purely business meeting no visitors were in attendance.

After the minutes had been approved Dr. Harper Peddicord of Fort Bragg was elected to membership.

With the two previously elected new members, Dr. Judson Liftchild and Dr. G. W. Stout of Ukiah, the Mendocino County Medical Society closes the year 1916 with a membership of seventeen.

Those present at this meeting were Drs. L. C. Gregory, F. C. Peirsol, C. L. Sweet, F. McLean Campbell, H. H. Wolfe, G. W. Stout, Harper Peddicord and Oswald H. Beekman.

A communication from Mrs. F. A. Spalding, mother-in-law of the late Dr. Philip Mills Jones, Secretary of the Medical Society of the State of California (Mrs. F. A. Spalding acknowledges with gratitude your kind expressions of sympathy at this time). This referred to the sad occasion of the double funeral of Dr. Philip Mills Jones and his widow, who survived him only by a few hours.

Election of officers for 1917 came next.

The following is a list of the elected and appointed officers for 1917:

President, Dr. Frank C. Peirsol, Mendocino; Vice-President, Dr. G. W. Stout, Ukiah; Secretary, Dr. Oswald H. Beckman, Fort Bragg; Delegate, Dr. Oswald H. Beekman; Alternate, Dr. Lester C. Gregory; Censors, Drs. C. L. Sweet, Judson Liftchild, G. A. Woelffel, Arthur C. Huntley, E. H. Sawyer and O. H. Beekman; Committee on Program for 1917, Drs. H. H. Wolfe, H. O. Cleland, Harper Peddicord, O. W. Sherwood; Committee on Ways and Means, Drs. F. McL. Campbell, Ida Malpas, S. L. Rea, A. D. Pitts and L. C. Gregory; Committee to look after joint meeting with the N. W. P. R. R. S. Association, Drs. G. W. Stout, Judson Liftchild, L. C. Gregory and F. McLean Campbell.

The annual dues were made $7.00 instead of $6.00. Dr. Peirsol, the sole member from this County Society to respond by his presence to the invitation of the N. W. P. R. R. Surgeons' Association to attend their meeting at Santa Rosa, reported a fine time and a very instructive trip.

Dr. Stout made a few remarks on conditions and operations at San Quentin. He stated that from twelve to fifteen M. D. convicts are working in the hospital.

After closing our arduous labors Dr. Gregory invited us to step into the dining-room and told us not to feel bashful in the least as all the dishes had been prepared under the personal supervision of his wife. The table and its decorations, both floral and meaty, looked very attractive and made one feel hungry. Three forks at your left hand gave a hint that preparedness was the best policy. I must say that nothing had been left to the tender mercies of any careless person, everything carried the stamp of the master housekeeper. We extend our thanks to Dr. and Mrs. Gregory. May they ever fare just as well throughout their journey here below.

OSWALD H. BECKMAN, Secy.

SAN LUIS OBISPO COUNTY.

At the last regular meeting of the San Luis Obispo County Medical Society Dr. R. O. Dresser of Paso Robles was elected president, Dr. C. J. McGovern elected vice-president, and Dr. A. H. Wilmar of Paso Robles was elected secretary.

Our society is progressing nicely.

Truly yours,
C. J. McGOVERN.

SAN JOAQUIN COUNTY.

The annual business meeting of the San Joaquin County Medical Society was held Friday evening, December 29th, at the office of the secretary. The society elected a Board of Directors for 1917 Drs. H. J. Bolinger, F. P. Clark, J. D. Dameron, L. Dozier, R. R. Hammond, C. R. Harry, L. R. Johnson, R. T. McGurk and D. R. Powell, and from this board elected Dr. C. R. Harry, president; R. T. McGurk, first vice-president; H. J. Bolinger, second vice-president, and D. R. Powell, secretary-treasurer. Dr. Barton J. Powell was chosen delegate to the State society, and Dr. W. J. Young alternate.

DEWEY R. POWELL, Secretary.

STANISLAUS COUNTY.

The annual election of Stanislaus County Medical Society was held December the 8th, and the following officers elected for the ensuing year:

President, Dr. F. R. Delappe, Modesto; Vice-President, Dr. W. C. Koebig, Riverbank; Secretary-Treasurer, Dr. E. F. Reamer, Modesto; Censor, three years, Dr. J. A. Young, Oakdale; Delegate to State Association, two years, Dr. P. N. Jacobson, Turlock; Alternate to State Association, two years, Dr. B. F. Surrhyne, Modesto.

E. F. REAMER, Secretary.

BOOK REVIEWS

Practical Bacteriology, Blood Work and Animal Parasitology. By E. R. Stitt, A. B., Ph. G., M. D., Medical Director U. S. Navy; Graduate London School of Tropical Medicine; Member National Board of Medical Examiners, etc. Fourth edition, revised and enlarged. Philadelphia: P. Blakiston's Sons & Co., 1916. Price $2.00.

The extensive use and favor which this handbook has found well justifies this fourth edition. The new material which the author has added to bring it up to date increases the size of the volume 100 pages and makes it more comprehensive even than the title implies. The practicality of this work is its most pleasing feature. It is interspersed freely with clinical notes and gives diagnostic procedures in detail. The diagrams and pictures are clear and well labeled. Much space is saved and clarity gained by the condensation into keys and tables of the classification and cultural characteristics of pathogenic organisms.

The subject matter concerned with tropical medicine occupies a relatively large portion of the book. Some of the discussions, such as those dealing with the characteristic blood pictures in the various types of anemia and leucaemia are clear and thorough. The subject of immunity is not considered at great length, only Ehrlich's theory being given, which perhaps is sufficient in this type of book. The work is unencumbered by consideration of non-pathogenic organisms, which point is well illustrated in the chapter devoted to the fungi.

Part IV, devoted to "Clinical Bacteriology and Animal Parasitology of the Various Body Fluids and Organs," is especially useful as regards methods of obtaining material for examination and the pathogenic forms one may expect to find in such material. An appendix of thirty-eight pages gives the technic of recent, more unusual laboratory procedures as well as those commonly used.

Although containing nearly 500 pages the book is small, being printed on thin paper and bound in cloth. J. M. R.

Diagnosis and Treatment of Surgical Diseases of the Spinal Cord and Its Membranes. By Charles A. Elsberg, M. D., F. A. C. S., Professor of Clinical Surgery at the New York University and Bellevue Hospital Medical College. Octavo of 330 pages, with 158 illustrations. Philadelphia and London: W. B. Saunders Company, 1916. Cloth, $5.00 net.

Elsberg is the recognized American authority on surgical diseases of the cord; a work from his pen which is, as he says in his preface, "a record of personal experiences in the surgical treatment of diseases and injuries of the spinal cord and its adnexa," cannot fail to attract attention and interest.

The first chapters deal with the anatomy and physiology of the cord and contain many points of practical surgical import not found in the usual text-books. Among the chapters on surgical diseases we would note especially those on tumor, with discussion of the author's two-stage "extrusion" operation, and on haematomyelia and syringomyelia, for which he advocates surgical intervention in selected cases. The indications for operation (aspiration) do not seem as clear in cases of haematomyelia as in syringomyelia; it seems doubtful whether the clots or products of cord-degeneration could be removed from the long slender areas of haemorrhage and softening characterizing this affection without unwarranted damage to the cord.

On page 122 Elsberg speaks of the use of stovain and cocain in laminectomies under local anaesthesia; cocain might be admissible for local applications to the surface of the cord or nerve-roots; novocain would be preferable for infiltration, and tropacocain for intradural injection; even the latter may prove disastrous if injected into the dura at high levels.

These, however, are small matters of individual opinion; the book as a whole meets every expectation, and will long remain a standard work. It is admirably illustrated and printed. May it reach many editions! L. E.

The Endemic Diseases of the Southern States. By William H. Deaderick, M. D., and Loyd Thompson, M. D., of Hot Springs, Arkansas. Octavo volume of 546 pages with 117 illustrations. Philadelphia and London: W. B. Saunders Company, 1916. Cloth $5.00 net; half morocco $6.50 net.

The endemic diseases considered are malaria, black-water fever, pellagra, aemebic dysentery, hookworm disease, and other intestinal parasites.

While pellagra has as yet been but infrequently found in this state, it will be seen from the other contents that this work is one which may well find a place on the shelves of the California practitioner. The consideration of malaria and hookworm disease is one of vital interest in this state; the survey of the malarial districts of California, together with the extensive studies on hookworm infection in California originally made by Doctor Herbert Gunn and now being prosecuted by the State Board of Health, show that a work devoted exclusively to these and allied infections, comes at the right moment.

The volume is beautifully gotten up, well illustrated and, it goes without saying, is up-to-date in every particular. G. M. C.

Pharmacology and Therapeutics for Students and Practitioners of Medicine. By H. C. Wood, Jr. Second edition. J. B. Lippincott Co., Philadelphia and London. 1916.

This treatise on pharmacology and therapeutics is written in a clear style, but is not exhaustive enough to answer the full needs of students of pharmacology. It does not compare in usefulness with the new edition of Cushny's Pharmacology. The book will be of more value as an adjunct to detailed lectures on these subjects than as a complete text book. A. C. C.

A Text-book Upon the Pathogenic Bacteria and Protozoa for Students of Medicine and Physicians. By Joseph McFarland, M. D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College, Philadelphia. Eighth edition, thoroughly revised. Octavo of 807 pages with 323 illustrations, a number of them in colors. Philadelphia and London: W. B. Saunders Company, 1915. Cloth $4.00 net.

In the eighth edition the author has improved his book considerably, having made many additions, and the necessary alterations.

Doctor McFarland has developed a book that is a necessity for the library of every practitioner.

S. R. D.

National Formulary, 4th Edition. By authority American Pharmaceutical Association. Prepared by Committee on National Formulary of American Pharmaceutical Association. Official from Sept. 1, 1916. Published American Pharmaceutical Association, 1916.

This is the first edition of the National Formulary since that work became a legal standard under the Pure Food and Drugs Act. It was originally intended as a compilation of formulae not sufficiently important or well established to be included in the Pharmacopoeia. Its main advantage was elasticity. Being entirely unofficial no responsibility was assumed and therefore formulae could be adopted without any rigid rules as to therapeutic value. If found wanting they could be easily dropped.

In addition, the druggist could modify the menstrum or flavor or method of preparation and in this way many formulae were greatly improved.

Being made official the National Formulary becomes coordinate with pharmacopoeia and therefore ceases to have any reason for existing.

Under the old regime it could be made the stepping stone to and from the pharmacopoeia, but a legal standard should include only thoroughly well established formulae and these should be in the pharmacopoeia.

In accordance with its new dignity the National Formulary has adopted names which are more nearly correct than some of the old names, but it is to be feared that these will not come into general use. What physician for instance, will cease writing Essence of Pepsin and prescribe it under the new name as Elix Pepsinet Rennine Composite.

It is interesting to note that the new edition contains about the same number of formulae as the 3rd edition; 201 having been added and 183 dropped. A large number of those added are preparations dropped from the U. S. P. of 1910 and many of those dropped are preparations which were dropped from the U. S. P. of 1900, and temporarily adopted in the National Formulary.

The National Formulary is indespensible to the pharmacists and should be in libraries of every physician and carefully studied by him, for it certainly contains many good and useful formulae, many which have all the advantages without the disadvantages of some similar proprictaries. F. L.

Colon Hygiene. By J. H. Kellogg, M. D., LL. D., Battle Creek, Michigan. Good Health Publishing Company, 1915.

The author has undertaken with a reasonable degree of success to expound in untechnical language the physiology, pathology and therapeutics of the human colon. He has braved the danger, not with complete success, of making his presentation one-sided, of making the structure under consideration, the fons et origo of all human ills and of estimating the colon as an organ separate and apart in its structure and function from other parts of the body. The book is based on a long experience combined with much first-hand observation, and to that extent is valuable. A perhaps gloomy picture, however, is given of what might be termed the colonic outlook. "In the treatment of every chronic disease and most acute maladies, the colon must be reckoned with. That the average colon, in civilized communities, is in a desperately depraved and dangerous condition, can no longer be doubted. The colon must either be removed or reformed." The reviewer is moved to quote a favorite dictum from Professor Lusk in regard to Fletcherization. Said he, "If the Lord had intended man to chew his food so thoroughly, He would have given him thirty-three feet of mouth and six inches of intestine." Given the colon, "in civilized communities," we do not agree that its activity is wholly perverted and its presence wholly evil.

Kellogg does indeed base his thesis on sound argument and this is best expressed in his own words. (1) That constipation with its consequences is the result of unnatural habits in regard to diet and colon hygiene. (2) That patients are not constipated on general principles but that there exists in every case some particular condition which is the immediate cause. (3) That practically every case of constipation is curable, and in all but exceptional cases without the aid of surgery.

The book will repay reading, particularly if the reader, especially if he be a physician, keep his mental poise as to things physiological and reads with discrimination. It is full of interesting suggestion and practical points. It may be commended to the practitioner, with the grain of salt merely, that its perusal be accomplished in a critical and estimating spirit. A. C. R.

The Medical Clinics of Chicago. Volume II, No. III (November, 1916). Octavo of 211 pages, 44 illustrations. Philadelphia and London: W. B. Saunders Company, 1916. Published bi-monthly. Price per year: Paper, $8.00; cloth, $12.00.

Contents.

Clinic of Dr. Walter W. Hamberger: Modern medical treatment of chronic ulcer of the stomach and duodenum.

Clinic of Dr. Isaac M. Abt: Infantile paralysis.

Clinic of Dr. Ralph C. Hamill: Acute anterior poliomyelitis.

Clinic of Dr. Chas. L. Mix: Two cases of primary pernicious anemia.

Contribution by Dr. Wm. Allen Pusey: Some cases of eczema from external irritation.

Clinic of Dr. Frederick Tice: A case presenting Addison's syndrome. Gangrene of the lung: with special reference to treatment.

Clinic of Dr. Herman L. Kretschmer: Treatment of chronic colon pyelitis by pelvic lavage.

Clinic of Dr. Chas. Spencer Williamson: Polycystic kidneys. Case of recurrent endocarditis with cerebral embolism. A typical case of gout.

Clinic of Dr. Frank Smithies: Cases illustrating spasm at the cardia and cardiospasm associated with diffuse dilatation of the esophagus.

Care and Feeding of Infants and Children. By Walter Reeve Ramsey, M. D. Philadelphia and London: J. B. Lippincott Company, 1916. Price, $2.00 net.

This book forms part of the Lippincott series of Nursing Manuals. Its purpose of providing a summary of pediatrics with special emphasis upon

those aspects of the subject which are of most importance to nurses is, in the main, satisfactorily fulfilled. Chapters which may be mentioned are: Development of Child Welfare Work; Care of the New-Born Infant; The Nursery and Its Equipment; Time to be Spent Out of Doors; Clothing for Infants and Children; Breast Feeding, and Artificial Feeding. Brief descriptions are given of the commoner diseases of childhood, and there is an index. Particularly noteworthy is the abundance of excellent and pertinent illustrations.

A few minor features are open to criticism. The illustration of the teterelle breast-pump (p. 98), an unsanitary piece of apparatus, might profitably be omitted, though it is only fair to say that the author himself condemns it. The table of artificial feeding (p. 118) allows only 13-29 calories per pound body-weight during the first month of life, an amount which would certainly cause serious undernutrition. In spite of the modern tendency to give fewer feedings at longer intervals, six feedings a day will satisfy few infants in the first month. The directions for the preparation of casein milk (wrongly called "albumin" milk) are not the best. The curd should be rubbed through the sieve with the buttermilk and water afterwards added, and many pediatricians have found that a more suitable curd is obtained by allowing coagulation to take place at room temperature. The use of gelatin in melaena neonatorum, which is recommended on page 156, has been generally abandoned, as it deserves to be both because of its dangers and its inefficiency, in favor of substances containing thrombin or prothrombin, such as defibrinated or whole blood, or serum.

With these few exceptions, the book may be safely recommended for use as a text-book in training schools for nurses. H. K. F.

DEPARTMENT OF BACTERIOLOGY AND PATHOLOGY.

(Edited by Benjamin Jablons, M. D., San Francisco.)

[This department has as its chief object the dissemination of the special knowledge that is being developed in the scientific laboratories of the world, and which are of practical interest to the medical practitioner. Abstracts of general articles will be published from time to time as well as preliminary reports of subjects that are of universal interest.]

Journal of Laboratory and Clinical Medicine, December, 1916. Vol. II, No. 3.

Tonsillectomy During the Course of Acute Rheumatic Fever.

Roger S. Morris sums up the literature on the subject and finds that there is a diversity of opinion as to the frequency with which acute rheumatic fever is preceded by sore throat. As a result of more recent methods of examination of the tonsils many writers find these organs diseased in a much higher percentage of cases of acute rheumatic fever than was formerly supposed. The tonsils are not the only foci or depot of infection in this disease, acute polyarthritis arising following abrasions of the nose, pus pockets about the teeth or through the bronchial or intestinal mucosa. Since the conception of the disease as a metastatic infection from a local focus, the therapy has similarly changed and it is not considered sufficient to give salicylates with local treatment to the affected joints.

Since the tonsils are more frequently the primary focus of infection Morris concludes that in cases of rheumatic fever the tonsils when diseased should be removed as soon as the operation can safely be carried out.

Gerhardt's Test for Diacetic Acid in the Urine.

H. P. Barret suggests the following modification to avoid the delay incident to filtering off the phosphate precipitates produced by the addition 10% ferric chloride solution. About two c.c. of urine is placed in a test tube and an equal quantity of ferric chloride solution is allowed to run slowly down the tube. A layer is formed at the point of contact of both tubes. The tube is held at an angle of forty-five degrees and at the point of contact a ring of phosphate precipitate is formed. Directly below this ring a bordeaux red color appears if diacetic acid is present and tends to diffuse downwards on standing. The tube may be heated for differentiating other substances if necessary as in original test.

Comptes Rendus de la Societe de Biologie, Tome lxxix—1916, No. 8.

Bacillus Fecalis Alkaligenes as a Pathogenic Agent.

A. Rochaix and H. Marotte report two cases suffering from a typhoid-like condition in whom hemoculture showed the presence of the bacillus fecalis alkaligenes. Despite the comparative rarity of infections due to this agent they point out that this was evidently the organism responsible for the disease, inasmuch as their serum agglutinated the organism in a high titre. This organism has previously been considered a saprophyte and very little attention has been given it as a possible pathogenic organism.

Sterilization of Potable Water.

E. Doyen and Toda have found that it is possible to disinfect water which contains no spores but which has been infected with typhoid and paratyphoid by the addition of sodium hypochlorite in quantity sufficient to represent 3 milligrams of chlorine to the litre. The official solutions of hypochlorite are very alkaline and require neutralization with hydrochloric acid. The amount of acid used depends naturally on the alkalinity of the water to be sterilized as well as the solution of hypochlorite employed.

They conclude that the best method for the sterilization of potable water which will destroy non-spore-bearing bacilli as well as spore-bearers is the following:

Add 40 milligrams of hydrochloric acid to the litre of water and then add chloride of lime representing 2 centigrams of chlorine to the litre of water. The disagreeable taste that this gives to the water can be obviated by the addition of hydrogen peroxide or hyposulfite of soda.

Journal of Experimental Medicine, January 1, 1917.

Digitalis in Pneumonia.

A. E. Cohn and R. A. Jamieson summarize a series of 105 cases of pneumonia in whom the action of digitalis was studied. They found that digitalis reduced the pulse rate in fluttering and fibrillating hearts, and was not affected by high fever. In non-febrile hearts as well as febrile hearts, the same dose produces the same effects. The change observed in the conduction rate of the heart in pneumonia patients is not due to the intoxication of the disease, but is always found associated with the giving of digitalis. They conclude that digitalis exercises a life-saving effect in cases of auricular irregularity (fibrillation and flutter).

Journal of American Medical Association, December 2, 1916.

Experimental Endocarditis.

H. K. Detweiler and W. L. Robinson conclude as a result of an extensive study of chronic endocarditis, as well as a study of the pathogenicity of streptococci isolated from the saliva of normal individuals, that, 1, the streptococci isolated from cases of chronic endocarditis are of low virulence, probably lower than any hitherto reported as being recovered from a similar source.

2. These streptococci are capable of producing lesions in animals identical to those found in pa-

tients from whose blood these organisms were obtained.

3. The strain of streptococcus viridans isolated from the mouth of normal individuals are similar to those isolated from the blood of patients suffering from chronic endocarditis and are equally capable of producing heart lesions in the rabbit. In addition they found that the streptococci isolated from the blood gave no joint lesions, whereas those isolated from the mouth did give these lesions, and they consider this fact very significant.

Vol. LXVII, No. 24. December 9, 1916.

Spinal Fluid in Cases of Compression.

James B. Ayer and H. A. Viets review the literature and subdivide these cases into three types, each of which gives special fluid findings. They conclude that abnormal findings occur in the fluid distal to the point of compression and that these are chiefly marked increase in the protein content with or without yellow coloration of the fluid. Cell count is low and pressure of the fluid is always normal. The protein increase is above that met with in cases of tabes or paresis, the cells very few and chiefly endothelial in origin. There is a tendency in many of the cases to spontaneous coagulation. The Wassermann test was negative except where syphilis was present. Lange's colloidal gold test was positive in the maximum dilutions, i. e., the so-called "tumor zone." The culture was negative, although the syndrome was present in one case of epidural abscess. When the compression is at a low point in the spinal cord, the syndrome is more likely to be present and also accompanies acute processes more readily than chronic ones. It is also found more often in cases of intramedullary and meningitic lesions than in extradural processes.

HYGIENE AND SANITATION ON OCEAN VESSELS.

An article on "Hygiene and Sanitation on Ocean Vessels," by Surgeon Victor G. Heiser of the United States Public Health Service, which appeared in the "Military Surgeon" for November, 1916, is worthy of the attention of all physicians in sea-coast cities, as it discloses a state of affairs that may throw light on many cases of illness among passengers and crew where the diagnosis might otherwise be difficult to explain.

To quote briefly, the following unhygienic and unsanitary conditions are the rule on ocean vessels: "Water tanks on board are seldom sterilized, and if at any time during a vessel's history it has taken unsafe water into its tanks, it is more than likely that the supply will be infected for years afterward. Again, it often happens, when the drinking water tanks become exhausted during the voyage, that water from the boiler supply is pumped into the drinking tanks without reference as to whether the water is safe or not. . . .

"Experience further shows that outbreaks of diarrhea among the passengers occur on almost all vessels."

"Scarcely any cabins have thorough ventilation . . . so change of air does not take place." (The danger from tuberculosis is apparent.) "The crews' quarters are unusually dark and ill ventilated."

"Rats on ocean liners are frequently encountered in the cabins—the cabins usually have double walls and other places which afford convenient harboring for rats. Bed bugs are often present. Mattresses and bedding are seldom disinfected with steam or other means to rid them of vermin. Cockroaches are almost universal. Small red ants are even a greater nuisance."

"It is perhaps well for the comfort of the average passenger that he does not see the food either in the stores or during its preparation. Storerooms are nearly always infested with rats, cockroaches and ants. The refrigerators are generally in a filthy condition. The cleansing of the ice-box is practically never carried out. Dish rags are generally in a filthy condition and dishes are usually washed in cold water only (and)—are nearly always greasy. . . . pineapples, after the dishes are washed, are placed in the dirty water and then cut in the fancy design."

"Bath tubs are reasonably clean, but no ventilation provided for bath rooms. The towels frequently emit a foul odor, due to having been kept for many days in a moist, unventilated state before they are sent to the laundry. Water closets are fair, but arrangements for ventilation are lacking."

"(Only) on ships which are required to comply with American laws is there a fair amount of space set aside for hospital use. The surgical instruments are seldom adequate in variety or in good condition. Antitoxins, vaccines, and other life-saving armamentaria are seldom carried."

"It is difficult to understand why an intelligent public will permit itself to be placed in an environment aboard ship which is not only unpleasant but frequently dangerous. The manner of preparing the food, the quality of the water which is served, the ventilation of the cabins, the meager medical facilities, and the vermin, are conditions which are frequently detrimental to health and could not be believed to exist if they were not constantly found by actual experience."

"It is practically impossible to obtain distilled or other safe drinking water on any of the ships which cross the Atlantic, Pacific or the Indian Oceans. A properly ventilated cabin is a rare exception."

In the light of the above observations, and the standing of the writer is a guarantee of their accuracy, it seems only proper that local health boards and officers should be granted authority to correct such glaring disregard of the rules for hygiene and sanitation of the habitations of "perhaps twenty million people (who) travel during the year and over a million persons constantly at sea."

G. H. T.

NOTICE.

An Army Medical Reserve Corps Officer is desired, for duty in San Francisco. Must pass the required army examination or already hold a commission. Salary, $2,000.00 a year, with quarters, fuel and lights. Must devote whole time to duties. Preferably unmarried. Apply California State Journal of Medicine for particulars.

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Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. XV MARCH, 1917 No. 3

EDITORIALS

PAY YOUR DUES!

Have you paid your dues for 1917?

Do you know that if they are not paid BEFORE March first you will not be entitled to the protection against suits for malpractice?

Do you know that if your dues are not paid until AFTER March first you will have lost any protection in suits that may arise out of your acts of commission or omission during the period from January first until the date on which those dues are paid?

If you have not done so, remit at once to the Secretary of your County Society.

The insurance is worth while. It may be your turn next.

THE ANNUAL MEETING—CORONADO—APRIL 17, 18, 19.

From the information at hand a large and State-wide attendance is promised at the annual meeting at Coronado. The scientific program contains an unusual quota of papers dealing with debatable fields. The Scientific Program Committee, by dint of much hard work, has secured brief abstracts of the papers to be read, and has published those available in the last issue of the JOURNAL. The complete program, together with abstracts of all of the papers, will be published in the April issue.

We desire particularly to call attention to the interesting and varied series of entertainments arranged by the San Diego County Committee for the ladies accompanying members.

And do not forget—(1) Pay your full fare going; (2) ask for a receipt-certificate; (3) have this signed by the Secretary at Coronado; and (4) present this signed receipt-certificate to the ticket agent when leaving, and he will issue a return ticket for one-third fare.

A BILL FOR THE PROMOTION OF MEDICAL RESEARCH.

In another column we publish a clear-cut account of the substance of a bill whereby it is proposed that properly qualified research institutions may procure, for experimental purposes, unclaimed animals at the public pound. The present method of buying stray dogs and cats has led to many unpleasant complications, because it is inevitable that occasionally a stolen pet is unwittingly purchased. The proposed bill serves the purpose of allowing the laboratories to buy dogs which are legally, and without question of a doubt, stray animals, and completely precludes the possible accidental entrance of a prized animal into the experimental room. All animals purchased under this bill would, under any circumstances, be destroyed at the pound. Why not destroy some of them in a manner beneficial to the advance of medical knowledge and to the public?

The profession must stand behind this bill. And what is more, it must let the members of the legislature know in no uncertain way that it has the full support of the medical public. In the last issue we printed a full list of the members of the legislature. Read Dr. Whipple's article. Then write a good, strong letter to your Senator and Assemblyman, giving them your point of view. The divided session of the legislature was instituted for the very purpose of giving the public an opportunity to express its attitude and of allowing the legislators to study the public wishes concerning pending legislation. The law-making body is now in recess. Write that letter now, before your ideas have a chance to grow cold—and before you forget!

TRAINING-SCHOOLS FOR NURSES.

In another year the state law governing the registration of nurses will be operated so as to require a high school education of all candidates for the R. N. This step appears to be the beginning of the end of the proprietary hospital without a clinic service as a training-school for nurses. There is no more excuse for the existence of the proprietary training-school for nurses than for the proprietary medical school. The latter has practically ceased to exist, while the former thrives. No one in his right senses would even dream of founding a school for the training of physicians, in which all of the information required by the students is to be "picked up" as best it can be by contact with private patients only, under the care of a large group of physicians whose methods may vary as widely as their competence, and with no clinics, open demonstrations, or opportunity to make a thorough-going examination. Yet we are attempting to turn out the "trained" nurse by this very process.

And why? Because the proprietary hospital can not, unless it caters to the rich only, make both ends meet and at the same time give reasonable service unless it can get almost all of its nursing done for nothing or at a very nominal cost. To accomplish this economic feat the board of trustees opens, in connection with the hospital, what it is pleased to call a training-school for nurses, and a set of requirements for admission is formulated demanding, as a rule, a high school education and certain age and character qualifications on the part of candidates for the course. Suddenly it is found that there are not enough "girls to do the work" and the entrance requirements go by the board, perhaps forever. Thus we have, in full swing, the mediocre or poor proprietary training-school.

The exploiting of the pupil nurse in the proprietary hospitals was carried to such a degree that a successful movement for the inclusion of these women under the provisions of the eight hour law had its birth within the very walls of these institutions.

A superintendent of nurses who cannot keep up the numerical strength of the nursing-staff will last but a short time. But rarely, perhaps once in a moonshine, does the board of trustees, usually largely medical in its make-up, realize that it owes a very deep obligation to the women who elect to become pupils of the school. These women are led to believe that they are to receive a training which will enable them, upon graduation, to become full-fledged nurses. Fortunately (for the graduates) these women are most often of such mediocre mentality and education, frequently but little above the servant in type, that they actually think they have gotten a complete and efficient training. And the interesting feature is that this view is shared by many physicians. So, from the date of their graduation they are kept as continuously busy as their sisters, the graduates of a properly equipped, well conducted school. And worse yet, they receive the same remuneration as the well-trained women from the best training-school in the country.

It is slowly, but nevertheless surely, dawning upon us that a training-school for nurses is essentially and first of all a *school*, and that proper equipment, material, and the employment of recognized pedagogic methods are just as necessary to teach women nursing as they are to develop engineers, chemists or other professionals.

MEDICAL LEGISLATION.

On February 26, 1917, the California State Legislature will reconvene for the purpose of considering various bills that were presented during the first half of the session and also divers amendments. From this time on, more than ever before, is it important that those interested in medical laws be on the alert to prevent the passage of any vicious bills or any amendments. Already there have appeared amendments that are designed to do away with the protection of the public against half-baked, half-educated so-called doctors. There are three different "Drugless" crowds, each one of which is extremely active. For some time they have been busy circularizing the state and the Legislature, and a considerable part of their effort is exerted in the direction of their abusing what they are pleased to call the "Medical Trust." They all have active, paid lobbyists at work constantly, and as some of the legislators have felt all of the pressure from one direction, unless the regular medical profession gets busy the "Drugless" crowd are apt to accomplish their desires. One of these "Drugless" bills is fathered by a famous (?), universal specialist, who conducts a Turkish bath establishment and a regular emporium for the curing of all the ills of mankind! This bill is practically the same as the initiative measure which was defeated so decisively by the people at the election two years ago. Along with the small army of freak faddists, loudly clamoring for special legislation on behalf of their cults, there is a female lobbyist who seems to have the habit of appearing before the Legislature on behalf of some undesirable medical measure. Notwithstanding the fact that she has an M. D. degree, she had introduced amendments designed to give "reciprocity" (?) to everyone, including all classes of practitioners. For reasons heretofore given, the following bills are extremely undesirable and ought to be defeated:

Senate Bill No. 24 (Scott). A special "Drugless" bill.

Senate Bill No. 279 (Inmann). A special "Chiropractic" bill.

Senate Bill No. 105 (Ballard). A special "Chiropractic" bill, introduced at the request of the head of a notorious Chiropractic institution which has been in the limelight more or less constantly.

Senate Bill No. 760 (Stuckenbruck). A vicious amendment giving special privileges to one of the freak cults and extending to an almost unlimited degree the Reciprocity Act.

Assembly Bill No. 95 (Argobright). Special legislation on behalf of Chiropractors.

Assembly Bill No. 57 (Hilton). Special legislation on behalf of some of the "Drugless" crowd.

Senate Bill No. 110 (Luce). Places all health matters and also the regulation of the practicing of

Medicine, Dentistry, Optometry, and Embalming, under the supervision of three lay persons. The bill has been prepared with very great care and will receive strong backing; so unless sufficiently strong efforts are made to counteract the same there is danger that it will pass. It would be a calamity to deprive the State of the excellent services of the Board of Health, and all matters relating to licensure would be thrown into a terrible state of confusion.

There is no cult that professes to look after the sick and afflicted that is not already properly cared for by the present Medical Practice Act. The best interests of the public demand that before an individual is given a license to practice any system he must have a good basic education and a good training in properly equipped and properly conducted teaching institutions. If any "Drugless" practitioner can meet the reasonable educational requirements of the law he can obtain a "Drugless" practitioner's license, all that he has a right to demand. The better element amongst the "Drugless" practitioners are satisfied with the present arrangement. It is only those who have failed to pass the state examinations and those whose lack of training makes it certain that they could not pass, who are behind these movements to weaken the law. It does not matter what the system, sect, or cult the practitioner may claim to practice if he has the education and experience necessary to make diagnoses and to meet the various grave responsibilities that are apt to be placed upon the shoulders of anyone calling himself a physician.

The better element in the medical profession ought to be represented in Sacramento by a paid lobbyist. This question should be seriously considered at the meeting of the Council on March 3, as the Legislature will then be in session.

"A FOOL THERE WAS."

Under this caption, and signed "by the fool," appears a pithy discourse in the "Journal of the Outdoor Life" for January, 1917. It is commended to the studious attention of every reader of this Journal. In it are detailed the experiences of a man who contracted tuberculosis and went to the western plains for health. He improved, returned to his eastern home and promptly started on a course which ended in the re-appearance of the disease in himself, the death of two of his children from tuberculous meningitis, and the appearance of the pulmonary disease in another child and the wife. The story puts two burdens on the physician, the first to himself in his personal health, the second in his obligation to impress on patients the seriousness of tuberculosis and the danger of trifling with it.

The same apt title might well include another article in the same journal entitled, "On the Just and Unjust Alike." Here is told the story of three fools of a somewhat different type. The first was a lawyer with a vision, and the rare ability to make it come true. But when he was just ready for his crowning service to humankind, he found himself in the death grapple with the old enemy, the tubercle bacillus, which won out because he was weakened by lack of time and attention to hygiene and health. The second was a doctor who "poignantly felt the tragedy of poverty, and dedicated his life to healing the men and women who could only pay him a pittance." "Of course he knew that a man needs recreation, and leisure and exercise. None knew that better than he. But somehow he deluded himself with the reflection that his work was too important to wait." He went the way of the lawyer. The third was a minister who was working sincerely for the welfare of man's soul and therefore did not spare himself. "Whenever reason told him that he could not hold out in his great work, he comforted himself with the thought that he was divinely chosen." All signs indicated that he was to be the greatest leader for uplift and reform and betterment of the poor that the world had seen, and then the tubercle took him.

The three fools had each his ideal and nearly mastered it. Each had great possibilities and staked his all on developing them. Each could have been a blessing to his generation and a benediction on the future, had he not overlooked one thing. Each knew that thing well and helped his fellows to realize it. Each fell before the tubercle bacillus because he had weakened his resistance by hard unremitting work, lack of recreation, rest, exercise, fresh air, sun and a little leisure. Each knew but did not do. And the sad tale continues that the world was the greater loser, much greater than the mere man who died. It lost all he might have done and should have done, and did not do because he allowed himself to fall prey to an enemy who is no respecter of persons and who considers not the motives of the man, or his ideals or his ability, or the need the world may have for him, but considers one thing, only—if perchance his body be weak to allow the subtle germ to gain foothold and take a yard for an inch until the unequal fight is done.

Let not our brethren of the professions longer lay on us the burden that we knew and did not do, much less that we knew and did not warn others. The greater loss is shown in the story of the "three fools," and happy he who reads and heeds as he runs.

OLEOMARGARINE OR BUTTER.

When the much-advertised high cost of living affects the actual nutrition of any large element of the population, it becomes thereby a problem of the public health to remedy the condition or find an alternative nutriment. This is illustrated in the efforts reported in the last two years to turn into food value such low caloric values as straw, hay, etc., and the introduction of new or artificial fats. Such a condition prevails to no small degree in this country in regard to fats and proteins, and is especially noted in the case of butter. The use of butter is without question restricted by its cost and to whatever extent it is used among the classes with very limited income, it is at the expense of other articles of food of equal or greater importance. Fortunately, however, there is a sub-

stitute in oleomargarine which supplies practically the same nutritive value at a cost which should be not over about one-half that of butter. Moreover, unless the palate is unduly sensitive, the two products are almost indistinguishable by taste.

Such being the case, it is surprising to find that the federal government imposes a tax of ten cents per pound on colored oleomargarine. It is to be hoped that a recent bill to reduce this tax to one cent per pound will become a law. The uncolored article is white while the addition of proper pigment makes it indistinguishable from butter in color.

Again it is surprising to find further, that the federal government imposes a special license fee on the retailer of oleomargarine and that the state of California adds to this an additional burden of still another license tax. Whether here there might be found an Ethiopian in the woodpile representing dairy interests, is another question. The fact remains that both state and federal governments place a tax on oleomargarine which results in making it unduly expensive or even unobtainable. And this fact is found along with the evident availability of oleomargine as a proper and inherently economical foodstuff for the very portion of the population which most needs such a source of fat and can least afford to pay for it.

If this were the whole story, it alone would justify investigation and legislative relief. But the matter is made more serious in the light of a report of the department of agriculture for the fiscal year ending June 30, 1912. This report showed after due investigation of some 1500 creameries that of 5154 creams examined, about 60% were sour, dirty or decomposed, and that more than 90% of the creameries themselves were in an unsanitary condition. Only a fourth of them practised sterilization at all. On the other hand, the very process of manufacture of oleomargarine from animal and vegetable fats practically insures a sterile product. Butter is no safer than the cream and milk from which it is made, so far as bacteria are concerned. What germs are in the butter to be had from such creameries as those reported above may well be imagined, and in fact have been abundantly demonstrated. While it is reasonable to hope that the condition of creameries is now better than at the time of the report quoted, still we must pause to consider the relative advantages of doubtful and expensive butter and cheap and reliable oleomargarine.

Since the high cost of living makes the obtaining of proper nutrition a public health problem of the first rank, it ought to be a matter for immediate investigation to determine why oleomargarine should not be available, at abouf half the cost of butter, to every resident of this state who wants it. Furthermore, the manufacture and sale of cream and butter should be subject to the same inspection and sanitary standard as for milk, and this duty should devolve upon the constituted public health authorities.

SPECIAL ARTICLE

ANIMAL EXPERIMENTATION AND MEDICAL PROGRESS.—AN ARGUMENT IN SUPPORT OF A BILL NOW BEFORE THE STATE LEGISLATURE.

By G. H. WHIPPLE, Director of The George Williams Hooper Foundation for Medical Research.

A bill has been recently introduced in the state legislature which is of considerable interest to the medical profession and of much importance to the medical schools of the state. This bill aims to further medical investigation by making available for laboratory purposes such unclaimed dogs and cats in the city pounds as otherwise will be destroyed. The bill provides that universities and medical schools can obtain cats for a fee of fifty cents and dogs for a fee of one dollar paid to the pounds for these unclaimed animals, provided the animals so obtained are kept in a sanitary manner and provided that no surgical operation is performed on these animals except under surgical anaesthesia.

There are many excellent reasons why such a bill should become a law, and some of these reasons are incorporated in this brief review. We wish to point out to the medical profession the reasons why their support will be very well worth while. The members of medical school faculties realize the influence which the practicing members of the medical profession exert in the community because of their close contact with people from every walk in life. We wish to arouse the interest and sympathy of all members of the State Society and gain their active support of this bill. Active support means a real effort to inform people about the bill and about its objects, as well as to use influence on the individual members of the state legislature. The people who will naturally oppose this bill will not fail to bring their objections to the notice of the legislators, and the medical profession should make an effort to inform the proper persons concerning the importance of this legislation.

The medical profession owes the public much information concerning medical subjects. The public is much interested in medicine, and strong support can be obtained by suitable information on medical topics. The public knows little about the important progress which is being made in medicine, surgery, hygiene, etc., and it knows still less about the methods of such progress. Too little is known about the careful painstaking work done in medical laboratories in an effort to find out just how the living body carries out its many functions. It is not fully realized that most of the important steps of progress in medicine have been made through experiments upon animals. It is the combined work of the physiologist, the chemist, and the clinician which makes possible many of the steps in medical progress. Experi-

ments on animals play a very important part in this progress,—it is safe to say an absolutely necessary part. Even the modern methods of diagnosis (e. g. Wassermann reaction) call for the use of animals ("vivisection").

Physicians must realize that any effort made in favor of such legislation will react in at least two ways. It will help this bill to become a law, which will assist the work being done in medical schools. More than that, we are helping to educate the public and to inform the state legislature concerning medical science and progress. This same work is of great value in the fight against pernicious medical legislation which comes up at times before the legislature. Much of the harmful medical legislation in this state and elsewhere is due to inactivity of the medical profession, which should take the public into its confidence, and give people information about its work, its problems, and its hopes for future progress.

Physicians have been known to ask this question of the experimental worker. Of what *practical value* is this or that bit of scientific knowledge? It is not always enough to reply that all accurate knowledge is of great value, and justifies any effort to attain such truthful information. This is a fact, but we must give examples to show how scientific truths of no obvious practical value have turned out to be of the very greatest value to humanity. We can point out that in Franklin's day there was no practical value in the study of electrical phenomena. Studies of the X-ray and radium emanations but a few years ago had only a purely scientific value. Drugs which stained living tissues were studied many years by Ehrlich before he discovered a chemical derivative (salvarsan), which is so destructive to the spirochaetes of syphilis. Examples could be multiplied indefinitely, if space permitted. It is obvious that a clear understanding of vital phenomena in man and animals calls for an enormous amount of difficult work. All knowledge so gained is of great value to the human race whether it appears to be of immediate practical value or not.

Not many years ago dissection of the human body was done under difficulties. Bodies were hard to obtain, and were often stolen or purchased from unscrupulous persons. This was because the public had not been educated to realize the necessity for the dissection of the human body, and individual sentiment was strongly opposed. Since the modern laws have been passed, we know that the unclaimed bodies from the cities supply this need of the medical schools. The matter is properly settled, and there is no agitation against such necessary work. We believe the present situation as regards the dogs presents a striking parallel to the above bit of history, and we hope the matter can be settled in much the same way to the benefit of all concerned. In both cases it is possible to overcome the sentiment of the individual by proper information and education. It is much to be desired that such information come from sympathetic physicians rather than from rabid anti-vivisectionists, who are always ready to spread misinformation before the public.

"Vivisection" to the lay reader means a surgical operation on a conscious animal (dog). Because of this fact, it would be best not to use the term, but it is hard to control the use of a word so firmly fixed in the modern vocabulary. "Animal experimentation" is preferable, but it is well to insist that "vivisection" means any experimental procedure involving the use of a sharp instrument upon a living animal. This includes hypodermic injection, drawing of blood from a vein by means of a needle as well as surgical operations. *It is to be emphasized repeatedly* that surgical operations are always done under surgical anaesthesia (usually ether). Vein puncture in the dog is done without anaesthesia just as it is done in all hospitals on human patients. It is recognized that certain experiments must be done without anaesthesia, as the anaesthetic would defeat the object of the experiment. But such experiments are extremely rare, and are undertaken only after the most mature and careful deliberation. The writer, during twelve years work in research laboratories, has never seen any such experiment performed.

The whole subject of animal experimentation has received the most careful consideration by a committee appointed by the American Medical Association. A set of rules was drafted by this committee, and printed copies of such rules are hung in conspicuous places in practically all research laboratories in this country. These rules make the director of the laboratory responsible for all experiments on animals, and these directors feel this responsibility very keenly. The rules specify the most careful attention for all animals, particularly after any surgical operation. It seems obvious that workers will take great care of the experimental animals if for no other reason than to insure the success of that particular experiment. It is safe to assert that these rules not only in the letter but in the spirit are adhered to by research workers in the modern laboratory. Every effort is made to see that animals receive the same care and attention as do human patients in the modern hospital. Occasional instances of carelessness can be found in the hospital as well as in the research laboratory, but these mistakes should not condemn both institutions.

A great variety of animals is used in the modern laboratory,—rabbits, guinea pigs, rats, mice, frogs, terrapin, sheep, goats, pigs, horses, cattle, chickens, monkeys, *dogs* and *cats*. Some animals are of particular value for certain work. The guinea pig is of great value in the diagnosis of tuberculosis and for the standardization of diphtheria antitoxin. The cat is of great value in the standardization of digitalis. The monkey is of peculiar value in the study of syphilis and infantile paralysis,—in fact, the virus of infantile paralysis can be recognized experimentally with certainty only by its action on the monkey. The dog is of especial value for the study of many problems in the physiology of the liver, pancreas and intestinal tract. Practically all of our knowledge of the condition of tetany has been obtained by means of experiments on the dog. Examples

could be multiplied indefinitely. It is not necessary to point out that all the agitation against animal experiments revolves about the dog and cat. The anti-vivisectionists can gain little attention except as the dog or cat is concerned. People are accustomed to the sacrifice of pigs, sheep and goats for food, and see no reason why these animals should not be sacrificed in the study of disease. The whole question is one of sentiment, which bears not on all animals but on the two animals commonly used as pets. The public must be informed that this bill proposes to make available for medical work only the stray dogs and cats which will otherwise be killed and made into fertilizer. These animals will serve a definite purpose as they will be used in experiments which give information of great value in the study of medicine. The animals receive proper care, and are operated upon only under surgical anaesthesia. At the conclusion of the experiment, the animal is anaesthetized, killed, and a complete autopsy performed.

We may inquire how dogs are usually obtained by the various research laboratories. Dogs are very difficult to secure in most communities, although in some fortunate schools there exist definite agreements by which some city dog pounds furnish the proper number of animals. Some laboratories have made an attempt to breed dogs for use, but this has proved too expensive even for the most richly endowed institution. Purchase of dogs from regular dealers is very expensive, as the dealers usually handle thoroughbred dogs. These dogs are not so resistant as the mongrel toward distemper, which is difficult to eradicate from any large collection of dogs. Most schools are forced to buy dogs from irresponsible persons who collect strays, and sell them to the laboratory. Occasionally stolen dogs are purchased, and this leads to unpleasant complications. The logical and sensible solution of this difficulty is a rational agreement with the neighboring dog pound. It is to be kept in mind that every city pound destroys thousands of dogs and cats every year (4000 dogs per annum in San Francisco). A large research laboratory will scarcely use 200 dogs in the course of a year. We see that only a small fraction of the dogs to be destroyed really come into this discussion. The research laboratories could make very profitable use of a small per cent. of the stray dogs which are annually killed in every large city. There can be no argument but that knowledge of great value can be gained by this experimental work on animals. It seems a proper and justifiable use for certain animals which in any case are bound to be destroyed.

Lack of information concerning actual experimental work and laboratory methods as well as the results obtained by such experiments are in part responsible for the hostile attitude of many intelligent persons towards animal experimentation or "vivisection." The medical profession will accomplish a great good for humanity if it can disseminate accurate information concerning animal experimentation and the great benefits which accrue to humanity through such work.

ORIGINAL ARTICLES

A REPORT OF FIFTY CASES OF TUBERCULOSIS OF THE KIDNEY AND BLADDER CLINICALLY CURED WITHOUT OPERATION.*

By F. S. DILLINGHAM, M. D., Los Angeles.

Surgery in the cases about to be reported has been placed on too firm a footing to be assailed at this late date and I wish to state at the beginning that I firmly believe in surgery and this report is made of cases that have presented themselves with both sides infected or who absolutely refused to be operated. For the sake of brevity no case reports will be given, but a summary of all the cases has been carefully prepared.

Going thoroughly into the past history of these cases the majority state, when closely questioned, that they have had some symptoms of this disease from one to ten years before and that with or without some simple treatment, the symptoms temporarily cleared only to return again. In this class the attacks return at shorter intervals and each attack lasts a little longer till pain drives them to consult some physician.

It is remarkable how long some individual families will allow a hematuria to go almost unnoticed, and sometimes even a nocturnal pollakiuria of every half hour, but pain usually prompts an early consultation. While I admit that the first case has only been clinically cured thirteen years and that this may be due to a quiescent state, still every case began to improve within the first month of treatment, and often within the first week as to their general health and strength as well as their special symptoms. Of the special symptoms the hematuria seemed to clear first and the frequency was the most stubborn, sometimes lasting after all other symptoms, as well as pus and bacilli had ceased.

Several years ago I cystoscoped a case that had typical tuberculous ulceration of the bladder with the usual changes of the ureter orifices, and yet the laboratory reported negative findings. I was so sure of this case that I recatheterized the ureters and this time we ran the electric centrifuge for one hour with the result that we found many bacilli on each slide. Ever since this experience I have insisted on the laboratories allowing their centrifuge to run for one hour, or thirty minutes with the newer extra-high-speed motors. After a reasonable search in some cases no bacilli are found, but a few dots or spores are encountered; in these, a prolonged careful search will practically always show tubercle bacilli. I insist on having an outside laboratory make an independent examination of the specimen at the beginning and end of treatment. Guinea pigs have been used in some of these cases as a final proof, but in the majority of the cases on account of the extra expense to the patient, I have been satisfied with the same careful search of the microscopical slides as was made on the first day the diagnosis was made, par-

* Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 20th, 1916.

ticularly as this last examination is not made till a month or two after the patients consider themselves entirely relieved of their former symptoms and the bladder remains clear, and this is repeated in two or three months after some physical strain or excess.

Three of these cases have had one child since, each with no return of their tuberculosis. Another case for the last four years has been drinking whisky and although intoxicated the greater part of the time, he has had no return of his symptoms.

All of the men and most of the women have been actively employed at the time they began treatment and 90% have been able to keep at their work during the course of treatment or were able to return within a very few weeks. In those forced to work, nature seems to provide strength to perform the regular every-day duties but promptly resents any additional labor. One case was doing very nicely when an extra walk of about sixteen miles, taken for pleasure, was promptly followed by a return of his hematuria. Backsets were recorded after chopping wood, loading hay and several, following the jar occasioned, by rides either on a horse or in a buggy or automobile.

Two cases developed tuberculous epididymitis in the course of their treatment. In the first case while considering whether he could go to the hospital for the removal of the epididymis, an abscess formed and was opened and drained at the office. All of the cheesy debris was removed and, much to my surprise, the testicular infection gradually subsided. Tubercle bacilli were demonstratd at the time the abscess was opened. By the end of one year there was only the slightest difference in the size of the two testicles and today, with the exception of a slight skin scar with some adhesions of the skin to the epididymis there is no difference on palpation. When the second case occurred I was very glad to see that the results were the same as in the first case and that no infection occurred either in the other testicle or in the prostate. It is seven years since these cases healed and I have seen both within a month and know that they have had no return of the infection in the testicles or bladder.

From the very beginning great care was taken not to get a reaction with the tuberculin. In the average case 1/75,000 mg. was given twice a week and so gradually increased that there was never a local or general reaction. In those cases, complicated by lung infections, this initial dose was reduced to 1/750,000 mg. For instance, I use two minims of a solution, 1 cc. of which represents 1/10,000 mg. or 1/100,000 mgm. respectively. As a guide for increasing the dose in the majority of the cases, I came to rely on the following: A feeling of well-being and less of the tired feeling, increase in weight and appetite, improvement as to the frequency either day or night, or both. Without any suggestion on my part, I came to expect them to mention the fact that following a treatment they felt better, and less tired, and that this feeling would last until about time for their next treatment, when they would begin to lag again. I was sure of progress as soon as this was mentioned and thereafter would strive to gauge the dose so as to produce this effect. If the dose is increased too rapidly at this point, the patient instead of feeling better, feels worse immediately following the treatment, that is, usually by that night or the next morning, and the feeling of well-being will not return, or will just begin to return, by the time the next treatment is due. Along with careful diet and hygienic measures, I am a firm believer in the use of silver nitrate for the bladder irrigations and until most of the pus and irritation has stopped, progress is 100 per cent. faster when some form of cleansing bladder irrigation is used, if used gently and carefully. In some cases relief is afforded by the instillation of gomenol or argyrol. Perhaps some of the poor results claimed for the use of silver nitrate are due to the fact that most authors recommend too strong a solution. I begin with a pint of a 1/50,000 solution in distilled water and frequently find that this is too strong, the rule being not to cause irritation either from the strength of the silver or the rapidity of its injection and when it is safe to begin to stretch the bladder, I do not overstretch more than once or twice at a sitting and am guided by symptoms whether to repeat it at the next visit or to rest for one or two visits. In increasing the strength of the silver, which is done as rapidly as possible, the bladder should never burn,—it is permissible for them to have a slight feeling of warmth for a few minutes, but it should not burn nor cause distress and the majority remark that it makes them feel easier and relieves their irritation, to have the bladder washed. Some patients have complained of having had silver nitrate used in so strong a solution by other physicians that their bladder burned intensely for more than an hour, and that often this condition would be followed by blood and great tenesmus, and their general condition would be made much worse. Two men claim to have fainted on the table following such brutal treatment.

The ages ranged from fourteen to sixty-five with an average of thirty-seven years. Sixty per cent. were males and 40 per cent. were females.

Family history was negative as to a history of tuberculosis in 95% of the cases. Previous history was negative in the majority of the cases. Two cases developed immediately following their first gonnorrhea. One gave the history of having had a severe attack of measles at the age of 25, and presented himself with both sides infected. One gave a history of having passed three stones from the right kidney fifteen years before, and one had had a pleurisy three years before.

Special symptoms: Ulceration of the bladder, did not go deeper than the mucosa in any case, practically all had a velvety condition of the mucous membrane over the trigone, usually worse in the region of the ureter in which the disease was the most active at the time. Golf hole ureters were found on one side in 15% of the cases. Papules with the very summit tipped with

ulcers were found in three cases, and in three cases the ulcers formed narrow ribbon-like bands. Hematuria relieved the severe pain in one case. The majority complain of tiring easily.

A careful record of the temperature and pulse was kept of all cases. In some the toxemia would be expressed as a subnormal temperature, others ran a low grade typhoid chart, while in a few the pulse only would be affected.

It is surprising how fast the pulse would run in the early stages of some of these cases. With the proper dosage of tuberculin, the temperature or pulse or both as the case may be, would gradually return to normal. One case with a normal temperature had an average pulse rate of 150 every afternoon until the clinical symptoms were very much improved when the pulse rapidly returned to normal.

Weight and improvement of weight: All were below the normal weight when they began treatment. One had dropped from 150 lbs. to 96 lbs. Smallest gain was 5 lbs., largest gain 80 lbs., average 25 lbs. Pain was complained of in the back, along the ureters, over the front of the bladder, at the end of the meatus, and even referred to the testicle. The majority of these kidneys were not palpable or tender to ordinary pressure.

Duration before treatment: One year to eleven years, an average of three and a half years.

Frequency: From three minutes to 2½ hrs. in the day time and from once or twice to every five minutes at night.

Hematuria occurred at some time in the history in 75% of the cases, lasting from two days to irregular attacks, the longest interval being eleven years.

Capacity of bladder: At the beginning of treatment varied from one teaspoonful to three ounces. As the bladders healed they were very gradually dilated with silver nitrate solution. Sometimes gomenol or argyrol was instilled at the conclusion of the treatment. It was very gratifying to notice how these bladders regain their normal size as the ulceration and inflammation diminishes.

Complications: Two cases developed tuberculosis of the epididymis. One stricture from a healed tuberculous ulcer almost closed the left ureter. This was before we had special dilators, and by being patient, I was able to dilate the stricture first with the finest filiform, later with ureteral catheters up to 6F, and it has remained this size.

Tuberculosis developed in the nasal cavities and frontal sinus in one case which was referred to a specialist for treatment, but who later reported no improvement of this condition.

There was definite involvement of the lungs with night sweats and clubbed nails in 20% of the cases, most of the others looked well nourished and in perfect health.

All of these cases have gradually returned to their normal life and consider themselves well, although warned not to return to the use of alcoholics or indulge in too much dancing or physical exercise. I will mention just one case to emphasize the necessity of the greatest care in every detail. I was called in consultation to see a case of severe cystitis with hematuria with a frequency of every five to thirty minutes day and night. With the aid of the deepest anesthesia I was able to demonstrate a bladder covered with tuberculous ulcers and the catheterized specimen showed tubercule bacilli on both sides. The bladder capacity was 45 cc. and this would be forced out if the bladder wall was touched or if the anesthetic was not pushed to the limit of safety. This physician wished to treat the patient himself and I wrote out the directions so there would be no mistake. In about three weeks the patient was turned over to me for treatment, with no improvement of any of her symptoms. At first, I could only introduced 4 cc. of silver solution at a time, but at the end of a month she could easily retain 30 cc. of the solution. At the beginning of treatment she weighed 114 lbs. At the time she was discharged she weighed 138 lbs., a gain of 24 lbs., and now she weighs 148½ lbs. but her average bladder capacity is 120 cc. With this exception she feels perfectly well, and has not had any treatment for five years. I feel sure the reason this patient did not improve under her physician's care, was because he attempted to use the tuberculin in too large a dose, and because of her sensitiveness it required too much patience for him to wash her bladder, and yet, we are well repaid for taking this extra time as the improvement can be seen from visit to visit, while as in all chronic diseases the real progress can be noted by comparing their present condition with that of their first visit, or by looking back two or three weeks. Patients are cautioned that they may expect backsets from time to time so as to overcome the mental effects when they do occur. The backsets can usually be traced to some form of excess, but as their whole condition improves, the backsets are not as severe and are at longer intervals until they cease altogether.

No claim to originality in the treatment of these cases is made. The points I wish to emphasize are that with the best hygienic care, compatible with the patients' occupations, cautioning them not to overdo physically, using extreme gentleness in the care of the cystitis and with small doses of tuberculin regularly given and carefully increased, not necessarily to the highest point of toleration for the individual patient, but to the point of greatest clinical gain that a great many who refuse to be operated, or who come with both sides infected, may be relieved, and possibly cured, and certainly may be made more comfortable.

If the same care is taken in searching the specimen from the good side, and the urine centrifuged, with high speed electrical centrifuge for one hour, infection on this side will be proved in a greater number of cases, and I think the majority of you will agree, that in organs as important as the kidneys, that two impaired kidneys can carry on the work of the body better than one crippled kidney. This does not mean when one side has gone on to a large abscess formation, and consists of a bag of pus, or caseous material, but in the

comparatively early cases such as have made up this series, and which we are able to diagnose to-day.

The lung men are not curing the hopeless consumptive, which the laymen can diagnose from across the street, but they are doing wonders with the early cases. We are trained to pick out these early kidney cases, and the general practitioner is becoming educated along these lines, so we see these cases earlier.

THE LIMITATIONS OF ROENTGENOLOGY IN TUMORS OF THE KIDNEY.*

By ALBERT SOILAND, M. D., Los Angeles, Cal.

In harmony with the title of this brief article it may be said that, excepting the condition of stone and hydronephrosis the diagnostic value of the X-ray in all other surgical lesions of the kidney including tumor, is as yet debatable.

As the available literature upon this particular subject is not extensive no references are made, and these remarks are all merely the writer's own opinions, based upon a moderate amount of work along this line.

At the outset it is well to bear in mind that the kidney is not a fixed organ, but is frequently subject to excursions that are as extraordinary as those of the human stomach. This has been forcibly brought to mind, when in searching for the right kidney a distended gall-bladder is erroneously localized for this viscus and later the true kidney is found, its lower half lurking behind the shadow of the pelvic brim.

The left kidney is more stable and also more easily visualized. Naturally the most satisfactory work the Roentgenologist is called upon to perform is the demonstration of greatly increased densities such as mineralized deposits or stones, and as these occur quite frequently in association with kidney enlargement, they may well be included in the discussion of renal tumors.

Next in order are hydronephroses with or without infection. Here a pyelogram will graphically outline this condition and made stereoscopically, markedly enhances its usefulness to the urologist.

Unless in its early stage, tuberculosis of the kidney is ordinarily readily recognized, and as it is usually associated with pus-forming organisms it presents a moth-eaten appearance that is quite characteristic, differing from any other kidney shadow with which the writer is familiar.

Calcified kidneys are occasionally met with and they offer a striking picture, sometimes illuminating the entire cortex and body structures of the organ. Localized calcareous deposits are common and may be differentiated from true stone. Cystic kidneys are less often seen Roentgenologically and are hard to interpret from pyonephrosis, pyelitis, localized hyperemias or enlargements.

To attempt diagnostic efforts beyond this simple classification the Roentgenologist will tread on dangerous ground, and even in well organized stone-free tumors, a negative Roentgen report is as apt to follow as a positive one.

In the list of abscesses, perinephritic, sub-diaphragmatic and retroperitoneal, many difficulties beset one. The kidney may be displaced or enlarged, its shadow cut into and obliterated by gas and overcast by contiguous organs so as to make the outline vague and diagnosis extremely uncertain.

The ureters lend themselves readily to inspection by means of catheters or opaque solutions. No more spectacular vision is known Roentgenologically than that of beholding stereoscopically a tortuous or bifurcated ureter descending from an equally irregular hydronephrotic kidney.

It is of paramount importance that the Roentgenologist exercise due caution before hazarding an opinion of a kidney lesion, particularly in the absence of injections or stone shadows.

A number of intercurrent abdominal shadows may sometimes show a kidney shape on the plate and easily lead to error. It is a rule to have the patient thoroughly purged before examination. This commonly results in the formation of excessive gas high light shadows which cut out all contiguous structures. One is just as apt to obtain a demonstrable kidney outline if the surrounding bowel is filled with its ordinary food content.

To sum up in a few words: X-ray evidence may be considered positive in the localization of stone and the interpretation of pelvic conditions amenable to injection with opaque solutions. Tuberculosis may in favorable cases be recognized. The position and size of kidneys can usually be determined.

Beyond this, it is the writer's opinion, that in all other renal pathology the clinical findings are of more value than the Roentgenologic.

* Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 20th, 1916.

TREATMENT OF SYPHILIS.*

By GRANVILLE MAC GOWAN, M. D., Los Angeles.

Fellow members of the Medical Society, State of California:

It has been thought by the program committee that it is best to have the treatment of syphilis discussed at this meeting, and I was requested to present the subject by a paper, as so many of the conditions which the general practitioner of medicine is required to treat in viscera, nerve tissue, bone, blood vessels and skin, are either of syphilitic origin, or, so closely simulate luetic diseases, that a good working knowledge of the treatment of syphilis, in all of its stages and conditions, is requisite in order that the doctor may succeed in his task.

The experience of many clinicians in many countries has led to the repeatedly expressed opinion that very few physicians in any community are capable of putting into practice the modern methods of combating lues, for the reason that they do not possess the clinical knowledge necessary to recognize syphilis. The student of to-day expects to make his diagnosis through the laboratory, because he has

* Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 20th, 1916.

been falsely taught that the one infallible criterion is the presence of a positive Wassermann reaction in the blood.

Clinical knowledge of syphilis is regarded as obsolete and hence the practitioner is often not in a position to recognize it at its inception, when it is readily curable. In my practice, it is at least a weekly occurrence to see people who have been treated for syphilis, who do not have it, but whose blood has given a positive Wassermann to some one; and to see people with the symptoms of syphilis as plainly signed upon them as the eagle is stamped upon the dollar, and yet, because someone has obtained a negative Wassermann in the examination of their blood, their malady has been held to be cancerous, or tubercular; or, as I saw a few weeks ago, a most plain case of nodular syphilis held to be, and treated as, actinomycosis, for a period of about three years, by a laboratory expert who poses as a doctor and who furnishes many of the practicing physicians in Los Angeles with their Wassermann reactions. In this case, after one injection of salvarsan and four intramuscular injections of salicylate of mercury, the clinical symptoms of this so-called "actinomycosis" have entirely disappeared.

Another case that comes to my memory is one in which a young Jewish gentleman had reecived three intramuscular injections of salvarsan, with terrible sloughs from two of them, and subsequently four intravenous injections of salvarsan and much mercury, for a tuberculosis of the tongue, cheeks and soft palate. This diagnosis was based entirely upon the laboratory findings of a positive Wassermann, and he was tortured accordingly. The man subsequently died of generalized tuberculosis.

A positive Wassermann reaction obtained by an expert, allowing for the recognized exceptions, indicates nothing further than that the individual has at some time had syphilis—if made by the average investigator the examination means nothing.

It seems a long cry from the day of Ricord, who first really arranged a systematic diagnosis of syphilis and provided a treatment which, with slight modifications, sufficed for more than fifty years to combat it, in a manner which often gave satisfactory clinical results. When one remembers the enormous number of people all over the globe who, within this time, have been infected with syphilis in their own persons, or protected from acquiring this disease by heredity, and their progeny which has surely been very great, it would seem really remarkable that there were any people living who were not more or less tainted with lues. Yet, while we are able to recognize a definite parasitical organism and its spores, as its cause and are supplied with improved methods of combating the life cycle of this micro-organism and encompasing its destruction, there is no uniformly accepted treatment of syphilis to-day, any more than there was a hundred years ago. It was thought after Shaudinn had discovered the spirochete pallida, and Neisser and others had succeeded in infecting lower animals with it, and its presence had been demonstrated by special staining methods, in muscle, nerve, glandular organs and the blood vessels, that if an agent could be introduced into the blood current, toxic to the spirochete, but not poisonous to the host, the disease could be cured promptly, once and for all. This unfortunately is not so, unless it be recognized at its inception before it has become a general infection. Since the introduction of salvarsan and neosalvarsan, persistent efforts have been made to systematize a method of attack upon syphilis in its various stages, with the hope of achieving this object. The value of salvarsan, hailed at first as a remedy which could sterilize the system of the spirochete, was for a long time not well understood. The almost magic manner in which both the primary and general manifestations of the disease, in many cases under one or two injections, disappeared, led the majority of the medical profession into the false belief that but little was required to effect a cure. Sudden untoward symptoms or complications were falsely attributed to the effects of the remedy. The fear of the arsenic in the drug also had its effect upon the experimental use of it. It was not recognized that its chemical effects were not cumulative. It was not known that probably the arsenic was not the active agent in the destruction of the parasites, but only a catalytic one. The frightful immediate pain occasioned by the intramuscular injections, and their destructive tissue effects, led very quickly to their being generally abandoned. The necessity of maintaining a continuous presence of these preparations in the blood current for a long period of time to obtain their inhibitory effect was not known. The gradually developed certainty that the Wassermann test is not a reliable indicator of cure has caused a distrust in the value of the new preparations, so that to-day one cannot say that there is a generally accepted method of their application. There are those, like Wechselman, who depend entirely upon them, and those, like Pusey, who do not use them at all. One set of men insists that one must give injections, intravenously, of salvarsan, neosalvarsan, or related arsenic compounds, at intervals of one to four weeks apart, in number from two to twelve, combined, or followed with frequent injections of insoluble mercurial preparations, or prolonged courses of inunctions for from one to three years; while others are satisfied with the giving of a few doses of salvarsan at intervals of ten days to a month apart, until the active symptoms have all disappeared, and then give their patients injections of insoluble preparations of mercury in series usually of from six to twelve, followed by intervals of rest, the length of which varies with the physician prescribing. One school keeps this up indefinitely, following an intense method for from three to five years, interspaced with frequent Wassermann examinations, the object of which it is difficult to surmise, unless it be the purpose of obtaining more money from the victim, for, whether they be negative or positive, the treatment is not abandoned. Many insist that a Wassermann of the blood be taken at regular intervals while the treatment is going on, and that when it becomes nega-

tive, the treatment should be stopped and not taken up again until it shows positive. Some pay no attention to the Wassermann at all until a certain period after they believe the patient has had enough treatment. Nowhere are the individual vagaries so manifest as in the practice for the eradication of the spirochete from the nervous system. Not only are arsenical preparations frequently thrown into the blood stream, mercurials used intravenously or by inunctions, but in addition, intrathecal injections of salvarsanized serum or neosalvarsan or mercurialized serums, are advocated, to be persisted in without limit, until the symptoms disappear, and until the spinal fluid becomes normal and the Wassermann reaction becomes permanently negative in the blood and the spinal fluid. Theories, longings, in the majority of instances, incapable of being realized. The disease is treated and the man is forgotten. I have known two individuals who received as many as sixty intravenous and subdural injections for nerve syphilis; both ultimately fatal. As I read the marvelous reports which are put forward in literature for intraspinal treatments, and view the actual results that have come to my notice, and compare these with the natural history of the diseases for which they are given, I can neither be hopeful or enthusiastic about them. I certainly would prefer to have the disease rather than to submit to such drastic treatment. Our enthusiasm carries us away. It is well to remember that "syphilis sleeps, it never dies."

When I was requested to prepare this paper, I not only started upon a review of all of the literature written upon the treatment of syphilis within the past four years, but I also obtained the personal views of a number of syphilographers, nearly all of whom are acquaintances of mine. All of these men know syphilis when they see it. They could get along very well without a Wassermann reaction in the usual cases, needing it only practically for nervous syphilis. I shall quote a few of these.

One, who is a noted specialist at the Arkansas Springs states: "In an acute case I use all the mercury that I can possibly get into the man in the six weeks or two months that the patient remains here. For instance, I use six injections of salicylate of mercury, one every other day, and then a dose of salvarsan. After two days' rest, mercury injections again in the same number followed by salvarsan, until he has had three courses. I am able to give injections of one grain of salicylate at a dose every other day without trouble, because of the baths with the radio active water. This amount of mercury probably could not be given elsewhere. In tertiary syphilis the use of the iodides are necessary before salvarsan is used, in order to get the greatest good of the salvarsan. As endarteritis is common in these cases, iodine favors the absorption of the luetic deposits in the arteries and gives the salvarsan a better opportunity to reach the spirochete. I treat nerve syphilis in about the same way. After leaving the springs, my custom is to have the patient after thirty days take thirty inunctions, one daily, and then rest two weeks, and then repeat the cycle for a year, after which he is to have a Wassermann, and should this be positive, the treatment to be continued just the same for another period of six months, and then another Wassermann and so on."

Keyes: "Acute generalized syphilis. Six injections of grey oil, then a sufficient number of injections of salvarsan .3 .4 to make a Wassermann negative, then six or eight injections of grey oil. Four courses the first year, three the second and two the third. Wassermann should be negative after six months. If symptoms or Wassermann recur, more salvarsan is necessary. Later outbreaks; salvarsan to control, then grey oil in courses usually continued two years, four courses a year. All cures to be verified by a negative Wassermann, at the end of one or two years after cessation of treatment. Marriage permitted after five years. If Wassermann not controlled after dozen salvarsans, I question whether there is any value in going any further."

Hayden: "Combined mercury, salvarsan or neosalvarsan, and potassium iodid. Salvarsan from six to eight intravenous injections, commencing with a small dose, reaching full dose the second or third injection; injections given at intervals of about a week. Good results from neosalvarsan; dose .9 grammes weekly, ten or twelve doses. Mercury by inunctions. Course of eleven rubbings every other night before taking arsenical injections. These inunctions are continued during the time of injections; also several months thereafter. Iodides second month treatment. Second year less energetic, with rests."

Eaton: "Intravenous injections of an inactivated serum, containing five grains of soamin."

Koll: "Primary syphilis, three injections neosalvarsan, ten days apart, then salicylate of mercury energetically, intramuscularly twenty to twenty-five injections, five days apart; rest four weeks. Second series; rest four weeks to six weeks. Treatment two years, intervals of rest increased up to three months, and three months after last injection Wassermann upon spinal fluid. Positive Wassermann, more mercury and more salvarsan. Patient under close observation five years. Wassermann must remain negative before dismissed. Wassermann every six months."

Geraty: "Primary syphilis with a negative Wassermann; one or two doses of salvarsan, depending upon the induration of the sore. If very indurated, two; not much indurated, one. Results perfect. Positive Wassermann, or early second stage, eight or ten doses salvarsan, intervals of two weeks to a month. Next six months, two or three salvarsans; treatment for year and a half. Length of time for keeping up treatments depends upon individual cases and judgment. In long standing cases, no definite form of treatment. Patient advised to have a course of treatment every year for several years, and even longer."

(To be concluded in April, 1917.)

STENOSIS OF THE DUODENUM.

By P. S. CAMPICHE,
M. D., F. A. C. S., M. R. C. S. (Eng.), San Francisco.

Case I. In September, 1913, Mrs. E. L., 34 years old, was referred to me by Dr. Emil Schmoll.

In childhood and as a girl she had always been in good health. At the age of 24 she suffered from dysmenorrhea and was operated on (ventrofixation and appendectomy). Soon after she began to have frequent attacks of vomiting; in fact, for the last ten years she had been vomiting every day, more or less. In 1912 she married and had a normal confinement in July of the following year. While pregnant she felt much better, but since the birth of her child her stomach became worse than usual; during the three months prior to my seeing her she had managed to keep her breakfast down but regularly vomited her lunch and her supper every day, together with a great quantity of bile. In these attacks the food came up first, then a gush of bile followed. She had no appetite and was very constipated but did not complain of pain. The abdomen was never distended, but was, in fact, rather retracted; the urine was normal. Her weight was 89 pounds.

After keeping her under observation for a week Dr. Schmoll made a diagnosis of stenosis of the intestine, probably due to adhesions, and advised operation for the relief of the continuous vomiting.

I operated on October 6, 1913, making a median laparotomy incision. Exploration of the pelvis organs revealed nothing abnormal, although the uterus was well attached to the anterior abdominal wall as a result of the previous ventrofixation. The colon and sigmoid flexure appeared to be much under normal in size, but the small intestine presented the most striking picture. It was quite empty and so much contracted that its calibre was that of an ordinary lead pencil in some places.

This suggested an obstruction at some higher level and the small intestine was followed up; the jejunum below the musculus suspensorius duodeni (Treitz' ligament) was somewhat wider though still below normal in size, while the stomach and duodenum were found to be greatly dilated and markedly hypertrophied. The caliber of the duodenum, in fact, was three times greater than normal and its wall was thick and hypertrophied and in the third portion, or pars inferior, especially was embedded in shining white adhesions. I have tried to picture its condition in the accompanying sketch.

In spite of very thorough palpation no recent ulcer of the duodenum or near the pylorus could be detected; the gall-bladder, apart from a few adhesions, was normal and contained no stones. I concluded that there had been an ulcer there some years previously which had healed and that, as a consequence, all these adhesions remained. Our diagnosis, based on the result of this long exploration, was stenosis of the duodeno-jejunal flexure due to peritoneal adhesions with secondary dilation and hypertrophy of the duodenum and the stomach.

Owing to the absence of a good serosa on the duodenum a direct anastamosis between the jejunum and the duodenum would have been most unsafe. Gastro-jejunostomy done in such instances of stenosis below the papilla duodeni has the inconvenience that bile flows back into the stomach,

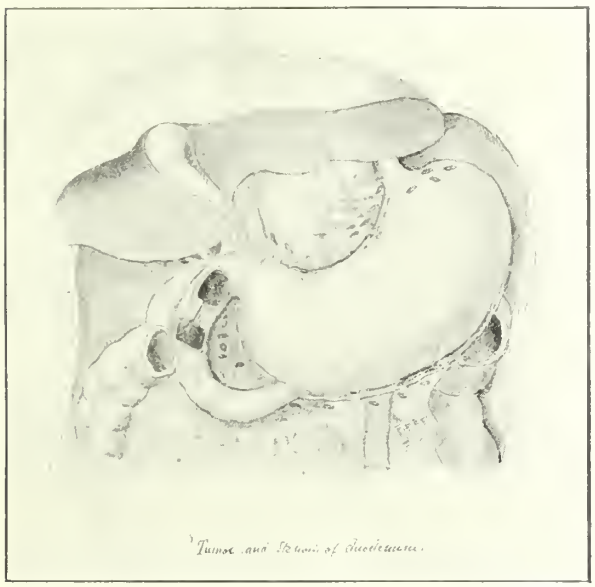
from which it escapes through the anastamosis. This could be prevented by closure of the pylorus if the duodeno-jejunal stenosis was incomplete, but in the case before me the stenosed part hardly admitted the tip of the finger and for fear that a still greater contraction might develop later at this point, I did not think it advisable to close the pylorus. On the other hand, gall-stone operations have shown in many cases of cholecysto-gastrostomy that the patient becomes accustomed to the continuous presence of bile in the stomach and does not suffer much discomfort or nausea. I therefore did a typical posterior no-loop gastro-jejunostomy with a very wide anastamosis; when the operation was completed I convinced myself that the new stoma readily admitted three fingers.

For the first week after operation the patient was kept on liquids and did fairly well; on the sixth day, after eating some toast and scrambled egg, she vomited bile in large quantities so that the liquid diet was continued a little longer until about the fourteenth day she was eating a regular semi-solid diet. Her weight was 82 pounds.

I saw her lately, nearly three years after operation; her weight is now 108 pounds. She considers her condition greatly improved as evidenced by the fact that she can now eat three square meals a day and does not vomit more than once

at night and only bile, which, considering her previous state of constant nausea, is indeed a vast change for the better.

I have been disappointed, however, because of her not gaining more in weight since the operation, although this may be attributed to the continuous presence of bile and pancreatic juice in the stomach which probably interferes to some extent with gastric digestion; but she is satisfied to be able to keep her food down and to find that she is much stronger and much more active than she was before the operation.



Tumor and Stenosis of Duodenum.

Case II. Mr. R. McH., 38 years old, was referred to me by Dr. M. Etcheverry in September, 1911.

The man had been ailing for several years and had been treated for gastric ulcer and afterwards for gall-stones; he was sent to me with a diagnosis of gall-stones. In spite of a fairly good appetite he was thin and anaemic and complained of severe pain in the epigastrium occurring about two hours after meals, accompanied with a sensation of hunger; the pain would occasionally extend toward the shoulders and was relieved by food. Although he always felt distressed and was often nauseated he never vomited.

When operated on in October, 1911, I found that the gall-bladder and the liver were slightly adherent to the duodenum, but normal otherwise; the serosa showed no alteration. At the second portion of the duodenum above the papilla duodeni there was a hard growth, three by three centimeters in size, somewhat irregular and seemingly more prominent on the anterior wall; a narrow channel could be felt through the tumor which explained the absence of more serious symptoms, the obstruction being incomplete. My diagnosis at the time of operation was duodenal ulcer, though later I had to change it; I did a posterior gastro-jejunostomy.

The patient improved very much at first; his pains left him and in three months he gained 15 pounds in weight. However, when I again saw him in May, 1912, he had a large, hard, irregular tumor in the liver and under the right costal margin, evidently a cancerous metastasis. This showed conclusively that the primary growth was not an ulcer but a carcinoma of the duodenum. Two months later, in July, 1912, he died.

Stenosis of the duodenum may be congenital or acquired. A congenital form described by Terry and Kilgore[1] was, in reality, a malformation of the duodenum. As a consequence of faulty development at the junction of the embryonic foregut and midgut the second part of the duodenum had a very narrow canal; the general nutrition of the patient had suffered very much and the case terminated fatally after a gastro-jejunostomy.

In the cases described by Harris[2] the trouble was also congenital and consisted in abnormal folds which caused constriction of an otherwise well-developed duodenum. Harris called these folds abnormal remains of a perfectly normal embryologic structure. The symptoms were mild, resembling those of duodenal ulcer and with very little or no vomiting. In all his six cases division of the abnormal bands was sufficient to effect a cure.

A third form of congenital constriction results from the so-called **pancreas annulare**, where the head of the pancreas completely encircles the duodenum and compresses it.

The duodenal stenosis in the acquired form may be due to several different causes, all of which are fully enumerated in Anders'[3] paper, who has collected reports of 262 cases, and gives a summary of eighty of them. In his opinion the factors most frequently responsible for stenosis are as follows, and though these conditions are somewhat rare, each of us has probably seen them all, at least once:

1. Carcinoma of the head of the pancreas and chronic pancreatitis, which are known to have been the cause of stenosis of the pars descendens of the duodenum, although they more ordinarily produce symptoms of papillary stenosis, such as chronic and progressive jaundice, with acholic stools and marked enlargement of the liver and gall-bladder. Such cases are common and all of us have seen them, no doubt.

2. Carcinoma of the duodenum, frequently mentioned by older authors, although it is now considered a great rarity. The second case reported above is a typical example of this condition, as was proved in the operation and by the subsequent course of the disease, although the clinical symptoms were not truly typical, being obscured by the fact that vomiting was absent owing to the incompleteness of the obstruction.

3. Duodenal ulcer is a condition which often causes narrowing of the duodenum, as is attested by Moynihan,[4] who had 43 such cases in his own experience; it is usually a cicatricial stenosis, but in some instances, as was also reported by the Mayos,[5] an hour-glass duodenum was found. Moynihan further observed that stenosis may occur after the suturing of a perforation of the duodenum.

4. Peritoneal adhesions, sometimes of unknown origin, may cause stenosis, which is well illustrated by the first case above reported. The ulcer, originally the cause of the trouble, has probably healed spontaneously or cannot be found, but it has left behind a trail of dense adhesions to compress the duodenum and pave the way for future complications.

5. Compression of the duodenum by gall-stones or by an inflamed gall-bladder is not such a very rare condition, and here the adhesions may also

be so dense that sometimes a gastro-jejunostomy becomes necessary.

In November, 1912, I recall, Drs. D. Voorsanger and Charles G. Levison[6] reported to this society a case of duodenal stenosis due to compression by a long adherent gall-bladder, and which was cured by cholecystectomy.

6. Compression by the root of the mesentery is given by Anders as a cause of stenosis and it has been the subject of so many reports published in recent years that I do not need to insist upon it here.

The symptoms of duodenal stenosis have been clearly stated already by Wilms,[7] Kausch,[8] and others. If the construction lies above the papilla (suprapapillary stenosis), as it was in my case of cancer of the second portion of the duodenum, the clinical signs will be the same as those of pyloric stenosis, such as vomiting of food with little or no bile, provided that the obstruction is complete.

If the compression is in the region of the papilla, especially if we have a papillary stenosis, the deep chronic jaundice with acholic stools and the enlargement of the liver, all give a very definite picture.

In cases of infrapapillary stenosis like the first case reported above, we will have two constant symptoms, which are:

1st. Abundant and oft-repeated vomiting of food and bile, which, however, never becomes fecal in character; and,

2nd. Absence of distention, and often retraction of the abdomen, even, which is attended with constipation, while the patient is often emaciated and in a state of complete exhaustion.

In pumping out the stomach in such cases, or when the patient vomits, colorless mucus or food remnants are seen first, followed by a gush of bile at the end of the procedure.

Treatment varies both according to the cause of the condition and as to the site of the stenosis. In cases where bands, congenital or otherwise, exist, and are the cause of the constriction, division will be necessary, and this will often be sufficient as is shown in the cases reported by Harris.

In stenosis due to diseases of the gall-bladder cholecystectomy is indicated as the best means of removing the compression and preventing, or at least minimizing, the formation of new adhesions.

If, in conditions of papillary stenosis, the duodenum itself has remained fairly patent, as often occurs in some cases of carcinoma of the head of the pancreas or in chronic pancreatitis, cholecystogastrostomy may give the patient great relief.

When the narrowing of the lumen is due to any disease of the wall of the duodenum proper, such as cancer, ulceration, cicatrices, or to dense and diffuse adhesions, gastro-jejunostomy is indicated; but while this operation has given complete satisfaction in suprapapillary stenosis, which closely resembles pyloric stenosis, it is by no means ideal in cases of infrapapillary stenosis, for the bile and pancreatic juice will constantly flow backward from the duodenum into the stomach and certainly interfere to some extent with gastric digestion, so that the patient is unable to gain very much in weight or even attain first class health, as may be judged from the first case here reported. Yet this procedure may be the only available one that will be safe in such a condition.

Discussion.

Dr. C. G. Levison: This paper is of interest on account of the infrequency of stenosis of the duodenum in the infrapapillary region. As Dr. Campiche has stated, Anders has collected several hundred cases and if I recall them correctly, most of them have been suprapapillary conditions. There have been comparatively few infrapapillary stenoses reported, and when one considers the frequency of pathological processes in the upper quadrant, it is extraordinary that so few cases of this kind have come to our notice.

In the condition reported by Voorsanger and myself that Dr. Campiche was kind enough to mention, the patient vomited large quantities of bile incessantly. There was no bile entering the intestinal tract, so that the diagnosis was comparatively easy to make. At the operation an enlongated, indurated gall-bladder was found lying across the descending part of the duodenum, producing complete obstruction. It is interesting when one considers the adhesions, ulcerations, old gall-bladder conditions and carcinomata that are so frequently present in this region, that this type of obstruction occurs so seldom.

Literature.

1. Terry, W., and Kilgore, A.: Congenital Stenosis of the Duodenum in an Adult. The Journal A. M. A., June 3, 1916, p. 1774.
2. Harris, M. L.: Constriction of the Duodenum due to Abnormal Folds of the Anterior Mesogastrium. The Journal A. M. A., April 18, 1914, p. 1211.
3. Anders, J.: Report of a New Case of Stenosis of the Duodenum. Am. Jour. Med. Sc., 1912, p. 360.
4. Moynihan, B. G. A.: Duodenal Ulcer, 1910. W. B. Saunders Co., Phila.
5. Eusterman, G. B.: Hour-glass Stomach and Duodenum. Collected Papers of the Mayo Clinic, 1914, p. 20.
6. Voorsanger, D., and Levison, C. G.: Stenosis of the Duodenum due to Compression of the Gall-bladder. Calif. State Med. Journ., Nov., 1912.
7. Wilms, M.: Stenosis des Unteren Duodenums, Bruns' Beiträge, 1897, p. 511.
8. Kausch, W.: Handbuch der Praktischen Chirurgie, 1913, vol. 3, p. 297.

ABSTRACT OF MINUTES OF THE EIGHTY-NINTH MEETING OF THE COUNCIL OF THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA, UNION LEAGUE CLUB, SAN FRANCISCO.

February 3, 1917.

The meeting was called to order by the chairman, C. G. Kenyon, at 12:15 p. m.

Present: Chairman C. G. Kenyon, Drs. Jayet, Ryfkogel, Bine, Ewer, Edwards, Hoisholt, Parkinson and later Hamlin. Dr. H. M. Sherman and Mr. Hartley F. Peart, attorney for the Society, were also present.

Parkinson acting as secretary, the minutes of the eighty-eighth meeting were read and approved.

Auditing Committee.

Ryfkogel for the Auditing Committee reported that in accordance with instructions of the Council, he had employed the firm of McLaren, Goode & Co., certified accountants, to install a system of bookkeeping. This had been started and a bookkeeper employed.

He then submitted a detailed statement of the financial condition of the Society. The following abstract shows the position of the Society at the end of the years 1915 and 1916, respectively:

COMPARATIVE BALANCE SHEET.

	Dec. 31, 1915	Dec. 31, 1916
Assets:		
Cash	$ 995.29	$1179.46
Accounts receivable	960.86	945.09
Paper on hand	512.80	1943.80
Furniture and fixtures	897.60	1300.50
	$3366.55	$5368.85
Liabilities:		
Loan Union Trust Co.	1500.00	
Medical Defense	2483.55	721.25
Sundry accounts payable	1189.94	641.11
Medical Indemnity Fund		4979.00
	$5173.49	$6341.36

Deficiency: End of 1915, $1806.94; 1916, $972.51

Bine also for the Auditing Committee said that at present no definite statement of expense was

available, as income and expenditure had been kept in one account. Thus the Journal was understood to be paying for itself and even making a profit. As a matter of fact, if all necessary expenses were charged against it, it was being published at a loss. It was proposed to establish a budget system under which the expenses of each department of the Society's business would be shown and the cost definitely determined. For a number of years there had always been a deficit at the close of the year. This had been wiped out by receipts from County Societies. Financial statements presented at each annual meeting were therefore true statements at that date. They did not, however, convey the actual condition of the Society's finances, as it really had an annual debit balance. The Committee felt that an effort should be made to wipe this out. He therefore suggested, as a tentative plan, that Dr. Sol. Hyman should continue to act as Editor, giving such time as was necessary to the work, at a salary of $50.00 per month, and that Dr. Saxton Pope be employed as Secretary at a salary of $150.00 per month; it being understood that Dr. Pope gives from 2 to 6 p. m. daily to this work.

On motion of Jayet, seconded by Hamlin and carried, the report was received and placed on file.

Bine said the Committee had been instructed to present the names of three members of the Society as Trustees of this fund. On canvassing the situation, the Committee deemed it best to submit a number of names and have the Council select from these. He accordingly submitted the following:

Adams, Lemuel P.....Oakland
Barlow, W. Jarvis.....Los Angeles
Briggs, William Ellery.....Sacramento
Burnham, Fred. R.....San Diego
Giannini, Attilio H.....San Francisco
Lobingier, Andrew S.....Los Angeles
Moffitt, Herbert.....San Francisco
Strietmann, William H.....Oakland
Wilbur, Ray L.....San Francisco

On motion of Bine, seconded by Hoisholt and carried, the Secretary was instructed to take a mail ballot of the Council and submit the result at the next meeting.

Dr. H. M. Sherman, who had been requested to put the recommendations contained in his Presidential address in shape for adoption, read a report covering these points.

Briefly, these provided for the "standardization and certification" of the physicians of the state in a manner comprehensible to the layman. He said there was nothing new in the plan, as it was operating in the following states and territories, the figures attached showing the proportion of membership of registered physicians: Massachusetts 61%, New Hampshire 71%, Alabama and Virginia 67%, Kentucky 63%, Hawaii 64%, Canal Zone 80%. It would be noted that the enrollment in Massachusetts was greater than in California.

The next point was that the Society should take up a definite propaganda, getting it in closer touch with the public. His own experience in tuberculosis work and later in connection with control of cancer had convinced him that this was perfectly possible.

The third point, to some extent, bore upon this, namely, as the Society had already large business enterprises under way, it should not be left in an isolated position, but should as far as these activities were concerned, affiliate with Chambers of Commerce, Boards of Trade, etc.

Dr. Sherman also submitted, not as a part of his address, but as he termed it a "lucubration," a paper in the form of further notes. Its prominent suggestions were that the President of the Society should be selected solely because he could do the Society some good or forward its interests; because he had some new ideas in Society activity or because of his general ability as an administrator or executive. He should be trained under the American Medical Association plan, by being selected as President-elect a year in advance. The President should preside at meetings of the Council of which the President-elect should be an ex officio member.

On motion of Ryfkogel, seconded by Jayet and carried, the report was received and placed on file.

It was moved by Ryfkogel, seconded by Hoisholt and carried, that a committee of three be appointed by the Chair, of which Dr. Sherman would be ex officio a member, to put the matter in shape for action by the House of Delegates.

The Chair appointed as such committee, Ryfkogel, Hoisholt and Hamlin, with Sherman as ex officio member.

The Chairman said he desired to speak of a matter of great importance, namely, the dereliction of Secretaries of County Societies in returning names and payments. In this connection, he read a letter from Dr. James L. Merrian of San Francisco, stating that he had not received the Journal but had paid for it. He thought that some method should be devised to correct this condition.

It was moved by Bine, seconded by Hamlin and carried, that the Secretary be instructed to notify County Secretaries thirty days in advance of the date of delinquency, March 1st, of the names of all members in good standing in the previous year whose names had not been received to date.

It was moved by Ryfkogel, seconded by Jayet and carried, that

Whereas, It appears that the Medical Defense Rules which have been adopted from time to time by the Council are not collected in one body and have not been brought up to date, and are therefore not available for use by the officers or members of the Society in succinct form; now, therefore, be it

Resolved, That the General Attorney for the Society be and he is hereby instructed to examine the records and minutes of the Council for the text of all existing rules on Medical Defense, and to revise and state same succinctly and clearly and present his report thereon at the next meeting of the Council.

The report of the Auditing Committee was then taken up for action, under Section 3, Article V, of the By-Laws.

It was moved by Bine, seconded by Ryfkogel and carried, that the salary of Dr. Sol. Hyman, as Editor, be fixed at $50.00 per month, commencing with February 5th, 1917.

It was moved by Bine, seconded by Ewer and carried, that Dr. Saxton Pope be elected to act as Secretary, at a salary of $150.00 per month, to take effect February 5th, with the understanding that he give from 2 to 6 p. m. daily to the work of the Society.

Los Angeles County Medical Association. A letter from the Los Angeles County Medical Association, urging that some person be employed during the remainder of the session to watch legislation, and that the Council appropriate the necessary funds therefor, was read.

In this connection Parkinson said that Dr. Percy T. Phillips, of the Board of Examiners, had to-day requested him to present this matter to the Council.

On motion of Parkinson, seconded by Hoisholt and carried, the matter was referred to the Committee on Public Policy and Legislation for consideration and for recommendation as to expense.

The Council then adjourned to meet on Saturday, March 3, at the usual time and place.

(Signed) JAMES H. PARKINSON,
Secretary pro tem.

ABSTRACT OF MINUTES OF THE EIGHTY-SEVENTH MEETING OF THE COUNCIL MEDICAL SOCIETY, STATE OF CALIFORNIA, UNION LEAGUE CLUB, SAN FRANCISCO.

December 2, 1916.

The meeting was called to order by the Chairman, C. G. Kenyon, at 12:15 p. m.

Present: Chairman C. G. Kenyon, President George H. Kress, Drs. Aiken, Ewer, Ryfkogel, Van Zwalenburg, Edwards, Hoisholt, Parkinson, and later Bine and Hamlin.

E. C. Moore, reported by Van Zwalenburg that he was unable to be present.

Mr. Hartley F. Peart, Attorney for the Society, was present by invitation.

The seat always occupied by Doctor Jones was ordered to remain vacant.

Parkinson volunteered to act as Secretary and was directed by the Chair to do so.

The minutes of the eighty-sixth meeting were then read and approved.

Report of Chairman.

The Chairman, Dr. C. G. Kenyon, stated that Dr. Philip Mills Jones, Secretary of the Society and Editor of the Journal, had died of pneumonia on November 27. He had at once assumed charge of the office and affairs of the Society and wished to say that he had met with the hearty co-operation of the entire staff.

On December 1, 1916, there was $3,200.00 in bank with cheques to amount of approximately $862.45, outstanding against it.

The December issue of the Journal was in the press.

The work of the office was up to date and was being carried on very smoothly. It was his intention, until a Secretary was secured, to devote whatever time was necessary to the work, and he assured the Council that nothing would be neglected.

Publication Committee.

A letter from the Publication Committee, signed by and addressed to the Chairman, was read offering to do all editorial work in connection with the Journal until such time as a Secretary should be appointed.

On motion of Van Zwalenburg, seconded by Hoisholt and carried, the communication was received and placed on file.

Auditing Committee.

Ryfkogel, for the Auditing Committee, reported that all bills to date had been audited.

On motion of Ryfkogel, seconded by Aiken and carried, the Chairman was empowered to have the books and accounts of the Society audited.

Malpractice Defense.

Mr. Hartley F. Peart, Attorney for the Society, made a brief statement outlining the transfer of the legal affairs of the Society to him, some months prior to the death of his former associate, Mr. Kauffman, and detailing how he had since continued to conduct them.

Mr. Peart in closing paid a very high tribute to the valuable assistance Dr. Jones had always rendered in malpractice defense. In this work his knowledge and judgment had been most valuable and he had found him a sincere and earnest worker in the interests of the profession. He said that within a few days he would file a statement to date of all cases in his hands.

A letter from Dr. R. E. Bering, offering to continue his assistance in the business management of the Journal, was read and ordered placed on file.

The President moved that a committee of three be appointed by the Chair to prepare a memorial and resolutions on the death of the Secretary.

This was seconded by Bine and carried.

A general discussion then ensued on the question of the election of a successor to Dr. Philip Mills Jones, as Secretary and Editor. Van Zwalenburg suggested the President as a possibility. Parkinson (by request) stated that Dr. E. M. Wilder of Sacramento was a candidate. The discussion dealt with the necessary qualifications for the office and the possibility of dividing the duties between an Editor and Secretary and an assistant as Business Manager. It was suggested that if the work were divided it did not necessarily follow that the officials should reside in the same place. It was also suggested that the office of publication of the Journal could be moved from San Francisco, while the general and legal business of the Society might continue to be transacted at that point. In the matter of salary it was brought out that this was not a fixed or certain amount, but depended for its production largely upon the man in charge of the Society's affairs, representing as it actually did such surplus funds, when all other expenses had been provided for, as the Council felt could be set aside for that purpose. The general consensus of opinion was that, if possible, the affairs of the Society should be placed in the hands of one man and that the present location of the Society's business should be continued.

On motion of Parkinson, seconded by Ewer and carried, the selection of a Secretary was postponed to a subsequent meeting.

On motion of Ewer, seconded by Hoisholt and carried, the Chairman was authorized to employ such additional office assistance as would enable him to carry on the business of the Society.

The Chair stated that the cheques of the Society carried three signatures, his own, that of the Chairman of the Auditing Committee and of the Secretary. The bank had requested that, pending the appointment of a Secretary, provision be made for the missing signature.

On motion of Parkinson, seconded by Hoisholt, the following resolution as submitted by the Attorney was adopted:

Resolved, That the funds of the Medical Society of the State of California now on deposit and hereafter to be deposited with the Union Trust Company of San Francisco, be subject to withdrawal by check or draft thereon signed by Dr. C. G. Kenyon, the Chairman of the Council of the said Society, and countersigned by Dr. H. A. L. Ryfkogel, a member of the Auditing Committee of the said Society, until the further order of the Council.

There being no further business, the Council adjourned to meet on Saturday, January 6, 1917, unless called together at an earlier date.

(Signed) JAMES H. PARKINSON,
Secretary pro tem.

ABSTRACT OF MINUTES OF THE EIGHTY-EIGHTH MEETING OF THE COUNCIL OF THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA, UNION LEAGUE CLUB, SAN FRANCISCO.

January 6, 1917.

The meeting was called to order by the Chairman, C. G. Kenyon, at 12:05 p. m.

Present: Chairman C. G. Kenyon; Drs. Edwards, Hamlin, Ewer, Bine, Jayct, Ryfkogel, Hoisholt, Parkinson and the Attorney of the Society, Mr. Hartley F. Peart.

Parkinson acting as Secretary, the minutes of the eighty-seventh meeting were read, corrected and approved.

Committee on Resolutions.

The report of the Committee on Resolutions on the death of Doctor Philip Mills Jones was read by Chairman Parkinson:

Whereas, At an untimely period and in the ful-

ness of a ripe experience, a useful life was briefly terminated; and

Whereas, We recognize that the years of which this experience was the fruition had been freely given to this Society, its scientific advancement and its material prosperity; and

Whereas, We believe that purpose, effort and intention were honestly and sincerely devoted, as he saw it, to the best interests of the profession;

Resolved, That in the death of Philip Mills Jones the Medical Society of the State of California has lost a valuable officer, a faithful worker and a trained intelligence at a time when such services were most needed;

Resolved, That we, members of the Council of the Society, whose duties bring us in contact with the management of its business and the conduct of its affairs, desire to personally testify to his diligence and general efficiency in the care of our manifold interests during the fourteen years in which he served as Editor and Secretary;

Resolved, That in our judgment his experience and special training, together with his recent legal qualification, had already proved a most valuable asset to the profession in connection with Malpractice Defense, and that with the proposed extension of this benefit his loss will be more keenly felt;

Resolved, That these preambles and resolutions be spread upon the minutes of the Council and published in the Journal.

JAMES H. PARKINSON, Chairman;
EDWARD N. EWER,
ANDREW W. HOISHOLT.

On motion the resolutions were adopted and ordered spread on the minutes.

Mr. Peart, the Attorney for the Society, made a report on the status of certain cases.

Publication Committee.

Bine for the Publication Committee stated that he had nothing to report. He desired to repeat his statement made at the last meeting of the Council that the Committee stood ready to assume full editorial charge of the Journal.

Auditing Committee.

Ryfkogel for the Auditing Committee reported that in its opinion a regular system of bookkeeping should be installed and that a bookkeeper should be employed.

On motion of Hoisholt, seconded by Edwards and carried, the Auditing Committee, with the concurrence of the Chairman, was authorized to employ such bookkeeper at a salary not to exceed $75.00 per month.

On motion of Bine, seconded by Ewer and carried, the Chairman was instructed to have the books of the Society audited and a new system of bookkeeping installed at an expense not to exceed $100.00.

Moved by Bine, seconded by Hoisholt and carried, that the action of the Auditing Committee in paying the claim of Dr. C. G. Kenyon for services rendered when in charge of the office in December, in amount of $250.00, be approved.

Medical Legislation.

A letter from Dr. Alderson of the Board of Examiners was read, mentioning possible attempts at new or amendatory legislation during the coming session of the Legislature and suggesting action.

On motion of Hamlin, seconded by Ryfkogel and carried, the Secretary was instructed to call the attention of the Chairman of the Committee on Public Policy and Legislation to Dr. Alderson's letter.

National Legislative Committee.

A letter from the American Medical Association, requesting the appointment of a representative from the State as a member of the National Legislative Committee, was read.

On motion the communication was referred to the President for action.

Election of Editor.

It was moved by Ryfkogel, seconded by Hamlin and carried, that in accordance with Section 3 of Article V of the By-Laws, the Council now proceed to the election of an Editor to fill the vacancy created by the death of Dr. Jones.

After some discussion as to the status of the Publication Committee and reiteration by Chairman Bine of his statement that it was able and willing to conduct the editorial work of the Journal,

It was moved by Ryfkogel, seconded by Hamlin and carried, that Dr. Sol. Hyman be elected Editor of the Journal to serve without salary.

Secretary of the Society.

It was moved by Hoisholt, seconded by Bine and carried, that the Chairman of the Council be requested to act as Secretary of the Society at a salary of $250.00 per month, giving such time as may be required for the proper conduct of the duties of the office.

The Chairman, Dr. C. G. Kenyon, said that since the death of the Secretary he had been spending most of his time at the office of the Society, to the serious detriment of his own business and at some personal expense in the employment of assistance. He felt that with the work now systematized less time would be required. He had endeavored, as far as he could, to see that the activities of the Society were carried on as usual and its interests protected. He would continue to serve at the pleasure of the Council and he assured those present that he would give whatever time was necessary for the proper conduct of the business.

Letter from Dr. Sherman.

A letter from Dr. H. M. Sherman was read, stating that he would, in accordance with the suggestion of the Chairman, attend the next meeting of the Council when he would present those subjects dealt with in his Presidential address which the Council had requested him to present in a definite form with a view to action.

Salary of Dr. Philip Mills Jones.

The question of paying the salary of the late Secretary for December, was then discussed. It was stated that, as far as could be ascertained, there were not funds on hand sufficient to defray the funeral expenses, as well as those of his last illness, amounting to about $475.00. The fact was also mentioned that from time to time in the past the Secretary had voluntarily reduced his salary when the funds of the Society were unable to furnish the amount fixed by the Council. A movement had been started by his friends to meet the indebtedness and $75.00 in two subscriptions had already been pledged. In view of these facts and Dr. Jones' very valuable services extending over so many years, the general feeling was that the amount in question should be paid.

The Attorney in reply to a question stated that, strictly speaking, the salary was not a liability of the Society, but he was quite certain the action of the Council in paying same would never be criticized.

It was then moved by Ryfkogel, seconded by Ewer and carried, that the salary of the late Secretary for the month of December, 1916, amounting to $400.00, be paid.

Parkinson desired to be recorded as voting No, on the ground that the salary was not a legal liability and that the matter had better be met, as had been attempted, by private subscription.

The Council then adjourned to meet on Saturday, February 3, at the usual time and place.

(Signed) JAMES H. PARKINSON,
Secretary pro tem.

CORONADO MEETING

ENTERTAINMENT PROGRAM

Provided Especially for the Ladies.

TUESDAY, APRIL 17.

2 to 4 P. M.—Golf, Tennis, Auto Trips.
8 P. M.—Music in Hotel Lobby.
Informal Reception to all visiting Doctors and their Ladies.

WEDNESDAY, APRIL 18.

9 A. M.—Personally Conducted Swimming Party for the Ladies.
2 to 5 P. M.—Dansant Tea; or San Diego Sightseeing Trip.
6 to 8 P. M.—Family Dinner—A real get-together occasion.
8 to 12 P. M.—Annual Reception and Dance.

THURSDAY, APRIL 19.

10 A. M.—Auto Rides to Point Loma, Grossmount or any place guests wish to go.
2 to 5 P. M.—Reception to visiting Ladies; in charge of Mrs. F. H. Mead's Ladies Committee.
8 P. M.—Bridge and Refreshments for the Ladies. Smoker and Vaudeville for the Men.

FRIDAY, APRIL 20.

9 to 11 A. M.—Golf and possibly Polo at Coronado Country Club. Swimming, Yachting and Steam Boating on the Bay.
11 to 4 P. M.—Trip to La Jolla.
Luncheon tendered by La Jolla Chamber of Commerce. Afternoon devoted to Motor trip to The Scripps Biological Institute of the University of California. Enjoying the Scenic Beauties of La Jolla, Sunset Cliffs and Point Loma.
Evening—Devoted to Theatre and Cafe Parties in the City of San Diego.

Privileges of all Clubs extended by card to members during the week.

TUESDAY, APRIL 17.

10 to 12—Opening General Meeting.
Reports, etc.
2 to 5—Section Meetings.
8—House of Delegates.

WEDNESDAY, APRIL 18.

9 to 12—Section Meetings.
2 to 5—Section Meetings.
8—House of Delegates.

THURSDAY, APRIL 19.

9 to 12—Section Meetings.
2 to 5—Section Meetings.
8—House of Delegates.

FRIDAY, APRIL 20.
Entertainment Only.

HOTEL ACCOMMODATIONS.

The local Committee on Arrangements of the San Diego County Society announces the following attractive rates to those attending the State Society meeting in April. The rates quoted are on the American plan, including room and meals with the high character of service for which the Hotel del Coronado is noted.

Room, with detached bath, for one person, $3.50 per day.
Room, with detached bath, for two persons, $6.00 per day.
Room, with private bath, for one person, $4.00 per day.
Room, with private bath, for two persons, $7.00 per day.

Still lower prices are quoted for the accommodation of chauffeurs and servants accompanying guests. While ample accommodation is promised for all who attend, it is requested by the Committee that reservations be made as early as possible.

The Committee is planning to meet all incoming trains at Oceanside and all incoming boats at San Pedro, in order to enable prospective guests to register before reaching the hotel, where they may go directly to their rooms previously reserved by wire. Requests for reservations or information regarding same should be addressed to Dr. H. Clifford Loos, Hotel del Coronado, Coronado, Cal.

Coronado in April offers in the immediate environment of the hotel such out-of-door attractions as tennis, golf, polo, motoring, motor-boating, sailing, fishing and bathing. While these are not to be allowed to detract from the scientific program, they insure to the ladies sufficient diversion at all times.

NOTICE.

The meeting of the Medical Society of the State of California, which takes place at Coronado Beach, April 17, 18 and 19, will be largely attended by members located in the northern part of the State.

The Santa Fe Railway will furnish special cars for the exclusive use of members and their families to be carried on their de luxe train "The Angel," leaving San Francisco at 4 p. m. Their trains, "The Angel" and "The Saint," provide the only through service between San Francisco and San Diego. These are rather unusual names for trains, but the service on them is also unusual. The dining cars have many unique features, being duplicates of cars operated on the Santa Fe de luxe, the new extra-fare train from Los Angeles to Chicago. The Buffet-Library car, the Pullman sleepers and the observation sleepers are all new, of the very latest Pullman pattern. Santa Fe employees have a national reputation for courtesy.

Southern California is entered through Cajon Pass and the train runs for two hours, just at breakfast time, through the orange groves. Altogether it is a service that we believe is superior to any. Los Angeles is reached at 8:45 a. m., through San Bernardino and Pasadena, and the San Diego sleepers continue through without change from that point. These trains afford the only opportunity of reaching San Diego without a change of cars or depots at Los Angeles.

Schedule of through service from points in Northern California is as follows:

"The Angel":

Leave San Francisco	4:00 p. m.
Leave Oakland	4:00 p. m.
Leave Berkeley	4:05 p. m.
Leave Richmond	4:22 p. m.
Leave Stockton	6:36 p. m.
Leave Fresno	9:20 p. m.
Leave Hanford	10:04 p. m.
Leave Bakersfield	12:01 midnight
Arrive San Bernardino	6:55 a. m.
Arrive Pasadena	8:17 a. m.
Arrive Los Angeles	8:45 a. m.
Arrive San Diego	12:50 noon

The one and one-third fare for the round trip has been arranged by all lines in Northern California. Members living on the Northwestern Pacific, Western Pacific, Sierra Railway or Southern Pacific, desiring to take advantage of the through service should instruct the agent from whom they purchase ticket to San Diego to see that same reads **Santa Fe** from San Francisco, Stockton, Oakdale or other junction point, securing certificate at time ticket is purchased. Upon presentation of the certificate, properly endorsed by the Secretary, to the Santa Fe agent at San Diego, return ticket via same route may be secured at one-third fare, making round trip for one and one-third fare.

IMPORTANT NOTICE

The Scientific Program Committee at the request of the Editor is printing only the titles in this issue. The April Journal will contain the complete and official program. Kindly report any inaccuracy to Dr. A. B. Grosse, 162 Post St., San Francisco.

TUESDAY MORNING, 9 O'CLOCK.

1. ADDRESS AND REPORTS OF COMMITTEES.

PRESIDENT'S ADDRESS ..... GEORGE H. KRESS, Chairman
MEDICAL LEGISLATION AND PUBLIC HEALTH ..... H. P. NEWMAN, Chairman
REPORT ON PUBLIC POLICY AND LEGISLATION ..... GEO. E. TUCKER, Chairman
REPORT OF COMMITTEE ON PUBLIC HEALTH ..... PERCY T. PHILLIPS, Chairman
REPORT OF COMMITTEE ON ARRANGEMENTS ..... JOHN C. YATES, Chairman
REPORT OF COMMITTEE ON SCIENTIFIC PROGRAM ..... ALFRED B. GROSSE, Chairman
REPORT OF COMMITTEE ON SOCIAL INSURANCE ..... RENÉ BINE, Chairman
REPORT OF COMMITTEE ON INDUSTRIAL ACCIDENT INSURANCE .....
..... C. P. THOMAS, Chairman

TUESDAY AFTERNOON, 2 O'CLOCK.

2A TUBERCULOSIS SYMPOSIUM.

Arranged by R. A. PEERS.

1. COMPLEMENT FIXATION IN TUBERCULOSIS.
   BENJAMIN JABLONS.
2. TUBERCULOSIS AND SYPHILIS.
   WALTER KLOTZ.
3. THE DIAGNOSIS OF TUBERCULOSIS.
   GEORGE E. EBRIGHT.
4. SOME FURTHER EVIDENCE OF THE SITE OF PRIMARY LUNG INFECTION IN THE HILUS.
   PHILIP KING BROWN.
5. HELIOTHERAPY: ITS APPLICATION TO PEDIATRIC PRACTICE WITH SPECIAL REFERENCE TO BRONCHIAL GLAND TUBERCULOSIS.
   WM. P. LUCAS.
6. FACTS AND DEDUCTIONS FROM SIX YEARS' OBSERVATION OF AMBULATORY CASES OF TUBERCULOSIS.
   C. C. BROWNING.

TUESDAY AFTERNOON, 2 O'CLOCK.

2B MEDICAL SESSION.

1. THE SIGNIFICANCE OF PERSISTENT PAIN OR OTHER SYMPTOMS REFERRED TO THE PERIPHERAL NERVES.
   HAROLD WRIGHT.
2. KIDNEY FUNCTION IN CHRONIC NEPHRITIS AS DETERMINED BY MARSHALL'S UREASE METHOD FOR ESTIMATING BLOOD UREA NITROGEN.
   E. H. FALCONER.
3. THE PRESENT STATUS OF THE WASSERMANN REACTION.
   H. R. OLIVER.
4. RESULT AND TREATMENT OF ONE THOUSAND CASES OF DELIRIUM TREMENS.
   R. E. BERING.
5. COMPLICATING SECONDARY PATHOLOGY IN GASTRO-INTESTINAL SURGERY.
   CHAS. B. HARE.

WEDNESDAY MORNING, 9 O'CLOCK.

3A SURGICAL SESSION.

1. INTERNAL HEMORRHOID OPERATION AND AFTER CARE UNDER QUININE-UREA HYDROCHLORIDE ANESTHESIA.
   E. JAY CLEMONS.
2. PAINFUL CONDITIONS IN AND ABOUT THE SHOULDER JOINT—THEIR DIAGNOSIS AND TREATMENT.
   ARTHUR L. FISHER.
3. THE VALUE AND LIMITATIONS OF THE MOVING PICTURE IN TEACHING SURGERY.
   JAMES T. WATKINS.
4. THE CORRECTION OF MALUNITED FRACTURES.
   P. S. CAMPICHE.
5. AN EXPERIMENTAL STUDY OF THE RESECTION OF THE KNEE-JOINT.
   JOHN F. COWAN.
6. FRACTURES OF THE NECK OF THE FEMUR.
   S. J. HUNKIN.
7. THE EMPOYMENT OF THE INTRAMEDULLARY BONE SPLINT IN FRACTURES.
   CHARLES G. LEVISON.

WEDNESDAY MORNING, 9 O'CLOCK.

3B MEDICAL SESSION.

1. RADIUM—ITS LOCAL APPLICATION AS A THERAPEUTIC AGENT.
   REX DUNCAN.
2. HODGKIN'S DISEASE AND ITS TREATMENT—WITH A REPORT OF CASES.
   W. W. BOARDMAN.
3. BOTULISM.
   ERNEST C. DICKSON.
4. MULTIPLE SEROSITIS—REPORT OF A CASE WITH AUTOPSY FINDINGS—DISCUSSION OF ITS CLASSIFICATIONS.
   GEO. H. EVANS.
   M. J. PRICE.
5. RAT-BITE FEVER.
   F. F. GUNDRUM.

6. ANALYSIS OF THE ANAPHYLACTIC REACTION BY MEANS OF THE ISOLATED MAMMALIAN HEART AND THE ISOLATED MAMMALIAN LUNG.
PROF. W. H. MANWARING, ARTHUR MEINARD, YOSHIO KUSAMA.

WEDNESDAY AFTERNOON, 2 O'CLOCK.

4A EYE, EAR, NOSE AND THROAT SESSION.

Session of General Interest,

Arranged by HANS BARKAN.

1. TUBERCULOSIS OF THE EYE.
PHILIP H. PIERSON.
2. LARYNGECTOMY INDICATIONS AND TECHNIC.
H. B. GRAHAM and L. C. DRAPER.
3. AN IDEAL INTRACAPSULAR EXTRACTION FOR CATARACT.
LLOYD MILLS.
4. END RESULT IN THE TREATMENT OF OZENA BY MEANS OF VACCINE.
HENRY HORN.

WEDNESDAY AFTERNOON, 2 O'CLOCK.

4B GENITO-URINARY SYMPOSIUM.

Arranged by ALFRED B. GROSSE.

1. PRACTICAL VALUE OF THE COMPLEMENT FIXATION TEST IN GONORRHEA.
MARTIN KROTOSZYNER.
2. FREQUENCY AND SIGNIFICANCE OF CASTS IN THE URINE.
STANLEY BLACK.
3. DEMONSTRATION BY MEMBERS OF PYELOGRAMS AND X-RAY PLATES DIAGNOSTIC OF KIDNEY TUMOR.

Discussion opened by GRANVILLE MACGOWAN

THURSDAY MORNING, 9 O'CLOCK.

5A SURGICAL SESSION.

1. GROUP STUDY IN THE ESTIMATION OF SURGICAL RISK.
F. W. BIRTCH.
2. EXOPHTHALMIC GOITRE—INDICATIONS FOR SURGICAL INTERVENTION—CHOICE OF PROCEDURE.
A. B. COOKE.
3. AMPUTATION STUMPS AND ARTIFICIAL LEGS.
LEO ELOESSER.
4. TUMOR OF THE CAROTID GLAND.
STANLEY STILLMAN.
5. DIVERTICULUM OF THE DUODENUM.
E. C. MOORE.
6. SOME IMPORTANT FACTORS IN DISEASES OF PERIPHERAL NERVES.
THOMAS G. INMAN.

THURSDAY MORNING, 9 O'CLOCK.

5B MEDICAL SESSION.

1. MOVING PICTURE STUDIES OF THE MOTOR PECULIARITIES OBSERVED IN STEREOTYPIC AND KINDRED MUSCULAR MOVEMENTS IN FORMS OF DEMENTIA-PRAECOX AND IN THE MOVEMENTS OF HUNTINGTON CHOREA.
A. W. HOISHOLT.
2. PERMEABILITY OF THE MENINGES TO ARSENIC IN PARESIS AND TABES.
J. H. BARBAT.
3. ULCERATIVE COLITIS.
H. C. MOFFITT.
4. TREATMENT OF HEMORRHAGIC CONDITIONS.
S. H. HURWITZ.
5. MAGNESIUM SULPHATE INTRAVENOUSLY IN BACTERAEMIA.
W. H. STRIETMANN.
6. THE RELATION OF MEDICINE TO CRIMINOLOGY.
JAU DON BALL.

THURSDAY AFTERNOON, 2 O'CLOCK.

6A SYMPOSIUM ON FUNCTIONAL PATHOLOGY.

Arranged by FITCH C. E. MATTISON.

1. THE RELATION OF THE VEGETATIVE NERVOUS SYSTEM TO INTERNAL DISEASE.
F. M. POTTENGER.
2. THE RELATION OF THE ENDOCRINE GLANDS TO FUNCTIONAL DISORDERS.
HENRY H. HARROWER.
3. THE PATHOLOGICAL PHYSIOLOGY OF THE THYROID.
CLARENCE TOLAND.
4. THE RELATION OF THE HYPOPHYSIS TO THE DISORDERS OF NUTRITION.
W. W. ROBLEE.
5. METABOLISM AND DISEASE.
LORENA M. BREED.

THURSDAY AFTERNOON, 2 O'CLOCK.

6B MEDICAL SESSION.

1. VALUE OF THE WASSERMANN TEST IN NEWLY-BORN.
H. H. YERINGTON.
2. MONGOLISM.
RACHAEL L. ASH.
3. THE USES OF EIWEISS MILK.
LANGLEY PORTER.
FLORENCE HOLSCLAW.
4. THE LIVER FUNCTION IN CHILDREN.
J. A. COLLIVER.
5. SOME PROBLEMS IN STARCH DIGESTION IN INFANCY AND CHILDHOOD.
E. C. FLEISCHNER.
A. E. MEYERS.
6. THE TREATMENT OF INFANTILE PARALYSIS.
JOHN CARLING.

TUESDAY AFTERNOON, 2:30 O'CLOCK.

PROGRAM OF THE EYE, EAR, NOSE AND THROAT SECTION OF THE CALIFORNIA STATE MEDICAL SOCIETY.

1. REPORT OF A CASE OF DEAFNESS OF SEVENTEEN YEARS' STANDING WITH SEEMING RECOVERY.
H. STAATS MOORE.
2. CONGENITAL OCCLUSION OF THE NOSE.
HARVARD McNAUGHT.

3. HEADACHE AND SECONDARY SYSTEMIC DISTURBANCES CAUSED BY INTRANASAL AND NASAL SINUS CONDITION.
ADOLPH BAER.
4. MALIGNANCY OF THE MIDDLE EAR AND MASTOID.
F. A. BURTON.

WEDNESDAY MORNING, 9:30 O'CLOCK.

1. SOME NEW POINTS IN THE TECHNIC OF THE SUBMUCOUS RESECTION.
F. M. SHOOK.
2. WHAT CAN WE DO TO IMPROVE OUR BUSINESS METHODS?
P. A. JORDAN.
3. A CASE OF CONGENITAL ANIRIDIA AS A FAMILIAR SEQUENCE.
WALTER S. FRANKLIN.
E. F. GLASER.
4. REPORT OF AN UNUSUAL EAR CASE.
C. F. WELTY.

THURSDAY MORNING, 9:30 O'CLOCK.

1. LANTERN SLIDE EXHIBIT OF EYE CASES WITH COMMENTS ON DIAGNOSIS AND TREATMENT.
HANS BARKAN.
2. REPORT OF A CASE OF OTITIC MENINGITIS.
E. C. SEWALL.
3. A STUDY OF AUTO-SERO THERAPY IN CERTAIN EYE DISEASES.
W. F. BLAKE.
W. T. CUMMINGS.
4. CLINICAL OBSERVATIONS OF CATARACT OPERATION.
JOHN J. SMITH.

THURSDAY AFTERNOON, 2:30 O'CLOCK.

1. THE INVISIBLE SPECTRUM AS AN OCULAR IRRITANT.
T. C. POUNDS.
2. OTOSCLEROSIS OF THE EAR.
M. W. FREDRICKS.
3. NOT RECEIVED.
C. M. HOSMER.

TUESDAY AFTERNOON, 2 O'CLOCK.

PROGRAM OF THE UROLOGICAL SECTION OF THE CALIFORNIA STATE MEDICAL SOCIETY.

1. SOME DERMATOLOGICAL CASE REPORTS.
THOMAS J. CLARK.
2. PYELITIS OF PREGNANCY.
A. B. CECIL.
3. ETIOLOGY AND TREATMENT OF FREQUENCY OF URINATION IN WOMEN.
W. E. STEVENS.
4. CHAIRMAN'S ADDRESS.
V. G. VECKI.

WEDNESDAY MORNING, 9:30 O'CLOCK.

1. DISURIA IN THE TABETIC.
H. W. HOWARD.
2. TITLE NOT ANNOUNCED.
GRANVILLE MACGOWAN.
3. AN ANALYTICAL STUDY OF 47 PERINEAL PROSTATECTOMIES.
FRANK HINMAN.

THURSDAY MORNING, 10 O'CLOCK.

MOVING PICTURES OF SUPRAPUBIC PROSTATECTOMY.
W. B. DAKIN.

WEDNESDAY MORNING, 9:30 O'CLOCK.

PROGRAM OF THE SECTION ON OBSTETRICS AND GYNECOLOGY OF THE CALIFORNIA STATE MEDICAL SOCIETY.

1. CARE OF FUNCTIONING BREASTS.
FRANK C. AINLEY.
2. OBSTETRICAL ANESTHESIA..
CAROLINE PALMER.
3. BACKWARD DISPLACEMENT OF THE UTERUS.
THOS. A. BURGER.
4. EMPHYSEMA COMPLICATING LABOR WITH REPORT OF CASE.
DUDLEY SMITH.

WEDNESDAY AFTERNOON, 2:30 O'CLOCK.

1. ELECTION OF OFFICERS.
2. VESICAL VAGINAL FISTULAE.
C. P. THOMAS.
3. SYMPOSIUM ON CYSTOCELE.
(a) H. P. NEWMAN.
(b) J. CRAIG NEEL.

PROGRAM OF THE NEUROLOGICAL SECTION OF THE CALIFORNIA STATE MEDICAL SOCIETY.

1. SPINAL CORD CHANGES IN COMBINED SCLEROSIS.
WALTER SCHALLER.
2. A DISCUSSION OF THE FAILURE OF ABDOMINAL SURGERY AND OTHER COMMON THERAPEUTIC AGENTS TO RELIEVE PAIN AND THE OTHER SYMPTOMS OF DISEASE OF THE VEGETATIVE NERVOUS SYSTEM.
T. J. ORBISON.
3. SYMPTOMATIC PSYCHOSES.
C. L. ALLEN.
4. STUDY AND CHARTING OF PERSONALITY.
V. H. PODSTATA.
5. REPORT OF A CASE OF AMARAUTIC FAMILY IDIOCY (TAYLOR SACHS DISEASE), THIRD CASE IN SAME FAMILY AFTER A LAPSE OF SIXTEEN YEARS.
CARL W. RAND.

SPECIAL SUPPLEMENT

Accompanying this issue, with the consent of the Publication Committee, is a special supplement containing a complete treatment of the subject of "Changes in the Incidence and Character of Tuberculosis Produced by Preceding Infection," by Dr. Eugene L. Opie, Professor of Pathology in Washington University, St. Louis.

This paper was read by Dr. Opie at a meeting of the California Academy of Medicine, is published at the expense of the Academy as a supplement to the Journal, and is being mailed with the Journal to each member of the Society, with the compliments of the California Academy of Medicine.

SOCIETY REPORTS

HUMBOLDT COUNTY.

PHILIP MILLS JONES.

In Memoriam.

Whereas, Our highly respected friend and colleague, Dr. Philip Mills Jones, passed away from our midst on November 27, 1916,

Resolved, That we, the members of the Humboldt County Medical Society, will ever hold with high regard and admiration the sterling integrity of his character, and his unfaltering devotion to the interests of the organized medical profession of the State of California; and

That we feel keenly his loss which will be well-nigh irreparable, and hereby extend our heartfelt sympathy to his sorrowing family, assuring them of our desire to share in their bereavement; and

That the above resolutions of condolence be spread upon our minutes, and that a copy of same be sent to the California State Journal of Medicine.

(Signed.) LOUIS P. DORAIS, M. D.,
C. O. FALK, M. D.,
LAWRENCE A. WING, M. D.,
Committee.

Adopted at a meeting of the Humboldt County Medical Society, January 16, 1917.

MONTEREY COUNTY.

At the last meeting of the Monterey County Medical Society, the following officers were elected for the ensuing year:

President, Dr. H. C. Murphy; vice-president, Dr. Garth Parke; secretary, Dr. T. C. Edwards; treasurer, Dr. John Parke; delegates to the State Society, Dr. H. N. Yates, Dr. G. Parke.

T. C. EDWARDS, Secretary.

ORANGE COUNTY.

The following are the officers of the Orange County Medical Association. Their terms expire in May, 1917:

President, R. A. Cushman; vice-president, G. A. Shank; secretary, W. C. Dubois; treasurer, H. S. Gordon; librarian, C. D. Ball; board of censors: J. M. Burton, J. Wehrly, H. A. Johnston; board of consultors: John L. Dryer, J. D. Clark, C. D. Ball.

RIVERSIDE COUNTY.

The regular January meeting of the Riverside County Medical Society was held on the 8th of the month at the Victoria Club, Riverside, Cal.

The program consisted of a paper entitled, "Visceral Reflexes," given by Dr. Chas. C. Manger, Professor of Nervous and Mental Diseases in the University of Southern California.

Following the business session a collation was served by the club chef.

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The February meeting of the Riverside County Medical Society was held on the 12th of the month at the Elks Clubhouse, Riverside, Cal.

The program consisted of a paper on "Prostatectomy" by Dr. W. B. Dakin of Los Angeles and illustrated with moving pictures, and a paper on "Tuberculin as a Diagnostic Agent" by Dr. L. M. Ryan of Banning. The latter was illustrated with lantern slides.

A. E. STRONG, M. D., Secretary.

SACRAMENTO SOCIETY.

The Directorate of our society elected the following officers to serve for the ensuing year: President, Dr. C. B. Jones; vice-president, Dr. G. A. Foster; secretary-treasurer, Dr. W. A. Beattie.

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The regular monthly meeting of the Sacramento Society for Medical Improvement was held at the Hotel Sacramento, Tuesday evening, January 16, 1917.

The meeting was called to order by the president, Dr. C. B. Jones, and the minutes of the previous meeting were read and approved.

Dr. H. R. Oliver of San Francisco, presented the paper of the evening, his subject being: "The Relation of the clinical Laboratorian to the Physician."

The paper was discussed by Drs. James H. Parkinson, J. W. James, A. M. Henderson, E. W. Twitchell, F. F. Gundrum, E. S. Loizeaux, F. Fairchild. Discussion closed by Dr. Oliver.

Dr. E. W. Twitchell, chairman of the Milk Commission, presented the requirements for certified milk as established by the commission, copies of which were ordered to be printed.

Meeting adjourned at 11:30 p. m.

W. A. BEATTIE, Secretary-Treasurer.

SAN DIEGO COUNTY.

The San Diego County Medical Society recently elected the following officers for 1917: President, Dr. H. C. Oatman; vice-president, Dr. Wm. Williamson; secretary-treasurer, Dr. G. T. Courtenay.

At a dinner meeting held on January 2 in the San Diego Hotel, Dr. F. A. Speik of Los Angeles presented a thoughtful address on Gastric and Duodenal Ulcer.

The second meeting in January took the form of a clinic at the County Hospital, where a wealth of interesting clinical material was presented and discussed by Drs. Wilson, Jennison, Little and Churchill of the visiting staff.

The staff of the County Hospital recently reorganized, adopted by-laws and elected Dr. B. J. O'Neill, president, and Dr. J. E. Jennison, secretary.

The committee on general arrangements for the State Society meeting in April is energetically at work on the detailed plans for the convention and report everything shaping nicely.

In many ways this meeting should be a record breaker.

Dr. F. M. Pottinger of Monrovia addressed a public meeting in San Diego under the Medical Library auspices, on the subject, "The Present Day Status of the Tuberculosis Problem."

The San Diego profession is entering vigorously into a campaign to improve the local tuberculosis situation. Education, Consideration, Legislation and Appropriation are the key notes.

The San Diego Diagnostic Group Clinic opens its doors February 16, for Diagnosis only. It

has been carefully planned and is being watched with much interest.

This clinic is the initial expression of "The John T. Scripps Memorial Foundation," which represents a desire on the part of the donor, Mr. E. W. Scripps, to furnish the working man and his family the best that the medical profession can give in diagnosis and care, at the lowest possible cost.

"Book Night" at the Medical Library in January was loyally supported by its members. The entertainment furnished by the House Committee was generous and of a high order.

Dr. H. T. Woodward was re-elected President of the Library for 1917.

The Medical Library is now a well established local institution.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held Friday evening, January 26, in the lecture room of the St. Joseph's Hospital. Those present were Drs. R. T. McGurk, N. E. Williamson, V. E. Edgerton, J. V. Craviotto, F. P. Clark, G. G. Hawkins, L. Dozier, E. B. Todd, E. A. Arthur, H. Smythe, Margaret Smyth, H. J. Bolinger, C. F. English, J. T. Davison, G. W. Walker, S. P. Tuggle, R. R. Hammond, I. S. Zeimer, H. E. Sanderson and D. R. Powell.

The report of the Admission Committee was accepted, electing to membership Drs. C. D. Holliger, N. E. Williamson, A. H. Heppner and F. J. Conzelmann of Stockton and Barney Coleman of Mokelumne Hill.

The scientific program was next in order, which consisted of the presentation of interesting clinical cases. Dr. Arthur presented a case which was of interest because of the apparent extreme low grade type of fibroid phthisis, discussed by Dr. McGurk. Dr. Craviotto presented a very interesting case of a large aneurism of the aorta which had eroded through two ribs just to the left of the sternum and could be very plainly seen as a large pulsating tumor. Dr. G. W. Walker presented a case of mastoid abscess with pointing of pus down the side of the neck clear to the clavicular line, in which he had used the treatment of swabbing the infected areas with pure carbolic acid followed by alcohol with immediate and permanent cessation of the purulent discharge. The cases were discussed by several of the members present. Dr. Davison displayed an interesting bronchial cast which had been coughed up in a case of pneumonia.

The meeting then adjourned to the dining-room, where a sumptuous repast was served by the St. Joseph's Hospital which was enjoyed by all.

DEWEY R. POWELL, Secretary.

SANTA CRUZ COUNTY.

The following have been elected as officers of the Santa Cruz County Medical Society:

President, Dr. H. E. Piper; first vice-president, Dr. G. S. Easterday; second vice-president, Dr. W. H. Keck; secretary-treasurer, Dr. A. N. Nittler; delegate, Dr. P. T. Phillips; alternate, Dr. F. H. Koepke; censors, W. H. Keck, F. H. Koepke, L. M. Liles.

A. N. NITTLER, Secretary.

TULARE COUNTY.

The officers elected by the Tulare County Medical Society for 1917 are as follows: President, Dr. R. N. Fuller, Tulare; vice-president, Dr. J. C. Paine, Exeter; secretary-treasurer, Dr. A. W. Preston, Visalia; member, board of censors, Dr. T. O. McSwain, Visalia; delegate State Society, Dr. W. W. Tourtillott, Lindsay; alternate, Dr. T. D. Blodgett, Tulare.

At the November meeting of the Society, Dr. T. G. Inman of San Francisco visited the Society and gave an interesting paper on "The Relationship of General Diseases to the Nervous System." A good attendance of the members marked this good meeting.

Another good meeting at which we had a good attendance was held on January 14, when Drs. Hunkin and Nolan of San Francisco were the guests of the Society and at which Dr. Hunkin read a paper on "The Treatment of Some Common Fractures."

A. W. PRESTON, Secretary.

YOLO COUNTY.

The Yolo County Society for Medical Improvement adjourned its regular meeting of February 6 out of respect to the memory of the late Doctor Philip Mills Jones.

LELA J. BEEBE, Secretary.

DEPARTMENT OF BACTERIOLOGY AND PATHOLOGY.

Edited by BENJAMIN JABLONS, M. D.

[This department has as its chief object the dissemination of the special knowledge that is being developed in the scientific laboratories of the world, and which are of practical interest to the medical practitioner. Abstracts of general articles will be published from time to time as well as preliminary reports of subjects that are of universal interest.]

COLLECTIVE ABSTRACT. NEWER BACTERIOLOGY OF SUBACUTE AND CHRONIC RHEUMATISM.

As a result of more careful and better controlled studies on rheumatism a large amount of information has been adduced that throws a good deal of light on the pathogeny of these conditions. The experimental production of arthritis has particularly contributed to the knowledge of this subject.

In 1891 Achalme isolated from a case of acute rheumatic fever a bacillus, which was later identified as the Welch bacillus, which is known to-day to be associated with various pathologic processes. In 1884 Loeffler produced arthritis by injecting streptococci into animals, but did not consider this in any way a specific process. Poynton and Payne published in the Lancet in 1900 experiments whereby they had succeeded in isolating a gram negative diplococcus, which they held responsible for the production of rheumatism. In 1914 Rosenow, whose pioneer work along the line of focal infections has received national recognition, attributed the etiology of acute articular and muscular rheumatism to the streptococcus viridans. This organism has since been considered to be the responsible factor in many other disease processes, some of which were formerly associated as complications or sequelae of acute rheumatic fever. The most recent work has been that of Faber (published November, 1915, in the Journal of Experimental Medicine), who has carried out an exhaustive study with reference to the mode of infection necessary for the production of experimental arthritis in animals and the pathogeny of arthritis in rheumatic fever. Another recent contribution has been that of Cecil, who studied the arthritic lesions produced in vitally stained rabbits following the injection of non-haemolitic streptococci. Then more recently Detweiler and Robinson have contributed a very illuminating paper on this subject, giving the results of a study of the types of organisms isolated in cases of subacute and chronic endocarditis and a study of the pathogenicity of streptococci present in the mouths of normal individuals. Since the streptococcus has

assumed so much importance in recent years, it might be well to devote a little time to a discussion of this organism and to its various types.

As a result of an extensive study of 5473 strains of streptococci, including a large number of strains isolated by Holman, the streptococci are divided according to their biological reactions upon various media. While it is true that the hemolytic variety are almost uniformly considered pathogenic, he has found that this is not always true and many organisms derived from apparently avirulent sources may produce pathological changes entirely comparable to that of the Streptococcus Pyogenes Hemolyticus. He finds that the only constant reactions are those obtained with blood agar and the use of the Gordon fermentation tests. The method of cultivation is worthy of note and I will touch upon it at length because of its relative importance. There are many cases of acute rheumatism as well as chronic rheumatic affections that have escaped notice because of the so-called negative blood culture. Independently of Holman I have observed that many blood cultures obtained from suspected cases of acute or subacute rheumatism would remain apparently sterile for a number of days and would show growth sometimes ten days after the blood culture had been made. The possibility of contamination could be ruled out because of the uniformity and purity of the micro-organism obtained. Occasionally by the use of the Rosenow medium we were able to hasten the growth of the offending microorganism. Our results following vaccine therapy were sufficiently specific to warrant the assumption that these organisms were etiologically responsible for the causation of the disease and could not be attributed to non-specific protein injection inasmuch as killed cultures produced an anaphylactic response when injected into the skin. Holman suggests that all the material be cultured in serum broth before plating on blood agar. The cultures are tested then on blood agar slants for the presence of hemolysis and then the ability of the organism to ferment lactose, mannite, salicin, and inulin serum broth determined. These are observed for a period of at least over seven days. The streptococci are then classified primarily into hemolytic and non-hemolytic forms. These are then re-divided into those which ferment lactose and into the non-lactose fermenters. These are again subdivided into those which ferment mannite and those which do not ferment mannite and finally into those which ferment salicin and those which do not. He then names these organisms according to these characteristics.

A classification such as that of Holman is of importance because it enables us to identify the place of origin of an organism once it has been isolated. For instance, it is of practical importance to be able to distinguish between the streptococcus fecalis or the pyogenes in the peritoneal fluid. In pus from the middle ear it is likewise important to know whether we are dealing with a severe infection by a Streptococcus pyogenes or a relatively milder invasion by the Streptococcus mitis or S. salivarius. In positive blood cultures with a Str. Viridans infection it adds very much to our appreciation of the disease to know whether the organism is a Salivarius with a possible portal of entry in the tonsils or buccal cavity or whether it is a Streptococcus fecalis with the probable source in the intestinal tract. If it is the mitis the source is not definite but is likely the mouth cavity.

Holman does not believe as a result of his study that the streptococci are specific in their disease production, and that we must not overlook the part played by the streptococci native to the animal in so-called animal passage. He believes that they live very often in symbiosis, which would explain possibly the transmutation experiments of Rosenow. He further asserts that focal areas of streptococcus infection often contain more than one type of streptococcus and that the hemolytic variety are commonly more virulent and pathogenic, producing more rapidly progressive disease processes than those of the viridans group.

In contradistinction to these conclusions we have those obtained by Rosenow in his work on focal infections. The importance of the subject of focal infections is evident to anyone who has followed the work of Drs. Billings and Rosenow. The technic they advocate is especially important and warrants being repeated in detail. The technic as advocated by Rosenow for isolating the streptococci is as follows:

"The streptococci were usually grown from sixteen to twenty-four hours at 37° C. in tall columns of ascites (10%) dextrose (0.2%) broth (0.6 + to 0.8 +) to which sterile tissue (guinea pig kidney or heart muscle) was often added; the sterility of the ascites fluid and broth containing the tissue was always proved beforehand. After incubation smears were made, the cultures were centrifuged in the containers in which they were cultivated, the supernatant fluid was decanted and the sediment suspended in sodium chloride solution so that 1 c.c. of the suspension contained the growth from 15 c.c. of broth. The doses for rabbits (ear vein) were usually from 0.5 to 3 c.c., and for dogs (leg vein) from 1 to 5 c.c. of this suspension. The injections were made quite rapidly through a rather fine needle (22 gauge), usually within an hour after the suspension was made. Blood agar plate cultures were made at the time the suspensions were injected to study the character of the organisms, to test their viability and to save them for further study. This is an important precaution because negative results have at times proved to be due to early death of the recently isolated organisms in the broth cultures."

A study of the table shows that streptococci from the various diseases often have a most striking affinity or tropism for the organs or tissues from which they are isolated.

Twenty-four strains from rheumatic fever produced arthritis in 66%, endocarditis in 46%, pericarditis in 27%, and myocarditis in 44% of the 71 animals injected, in contrast to an average of arthritis in 27%, endocardial lesions in 14%, pericarditis in 2%, and myocarditis in 10% of the animals injected with strains from sources other than rheumatic fever.

Three strains from cases of true myositis produced myositis in 75% and myocarditis (chiefly of the right ventricle) in 35% of the 40 animals injected, in contrast to an average of myositis of 12% and myocarditis of 10% following injections of strains from sources other than myositis or rheumatic fever and eight strains of streptococcus viridans from chronic septic endocarditis produced lesions in the endocardium in 84% of the 44 animals injected, in contrast to an average of 15% with the strains other than those from endocarditis. The results following injection of the miscellaneous strains (usually the first culture from tonsils) and the laboratory strains serve as a basis of comparison with those following injection of the strains from the various diseases, and correspond roughly with the total average incidence of lesions in the various organs.

Lesions in the intestines, exclusive of the duodenum, were more common with the strains from cholecystitis and rheumatism than those from appendicitis, and all the strains produced intestinal lesions (chiefly of the mucous membrane and lymphoid structures) quite commonly after they had been passed through animals, whereas, after cultivation for a time, no noteworthy lesions were found in the intestinal tract.

That the streptococci are the underlying cause

of the diseases from the lesions of which they were isolated is indicated further by the fact that they have elective affinity for the corresponding structures in animals. Moreover, the fact that the same streptococcus may be made to localize in different organs is in consonance with the knowledge that streptococci may cause diseases with different symptomatology.

This may be said to constitute the case for the etiologic relationship of streptococci in the production of acute and subacute rheumatic fever. There are other disease processes that simulate rheumatic fever. Gonorrheal infection of the genitalia is often followed by localization in joints that simulates that above process. According to Rosenow and others the difference between these processes and gonococcus infection is that the first is a non-destructive arthritis whereas the arthritis of gonorrhea is a purulent destructive process which not unusually produces subsequent ankylosis, but this is not entirely true, as will be seen later.

Murphy, who was to have delivered the Carpenter Lecture at the New York Academy of Medicine, but who unfortunately died previous to the date set for this lecture, summarized in his paper all of these conditions as metatstatic arthritides and subdivided them etiologically into those arthritides where the etiological factor had been found and those in which the origin could not be found.

In a series of 859 cases studied he found the streptococcus in 31%, gonococcus 14%, staphylococcus 8%, colon bacillus 4% and a combination of two or more organisms in 38% of the cases.

There was a definite period of incubation for every infection. For the Neisserian infection it was 18 to 24 days after the primary infection, for the staphylococcus 8 to 14 days, while a streptococcus infection might occur in 48 hours. In typhoid fever the secondary infection might occur four, six to eight weeks after the beginning of the disease manifestations. In this connection Dr. Kreuscher quoted Dr. Murphy as saying that he could not understand why certain authors reported positive cultures from the joint fluids in 5% to 87% of the cases. Dr. Murphy believed that the infection was a periarticular one and only in rare cases did the bacteria pass directly into the joint fluid.

Dr. Murphy was of the opinion that the bacteria found lodgment in the terminal arterial branches of the synovial membrane and did not penetrate further into the joint cavity. And although a little out of the province of this paper, Dr. Murphy is quoted there as advising the use of autogenous vaccines prepared from organisms cultured from the patient's blood in addition to other surgical measures.

It may be seen from the above that there is no unanimous opinion as to the universal role that focal infections are supposed to play in the production of subacute and chronic rheumatic processes.

Chronic Infectious Arthritis.

Under the classification of chronic infectious arthritides present knowledge justifies the consideration of chronic arthritis which may be due to various forms of pathogenic bacteria. Investigation has shown that a strain of the streptococcus, gonococcus, tubercle bacillus, bacillus typhosus and spirocheta pallida are the most common infectious causes of chronic arthritis. When other bacteria are found in the infected tissues of chronic arthritis and myositis, they may have etiologic relations to the conditions, but are probably present in the tissue as a mixed infection or purely as parasites.

The infection of the joints, muscles and other involved tissues with pathogenic organisms which usually are members of the streptococcus group and the gonococcus which are of relatively low virulence; (2) a hematogenous infection with embolism with resulting injury of blood vessels and small hemorrhages into the infected tissues; (3) lessened blood supply and oxygenation and consequent relative starvation of the infected tissues and dependent upon the malnutrition, favorable conditions for the continued life and multiplication of the infectious organisms, and finally (4) retrograde metabolism due to the malnutrition.

In the chronic infections due to the streptococcus, chronic arthritis may occur alone or associated with chronic myositis, and chronic myositis may also occur alone, involving single or groups of muscles. In chronic gonococcus arthritis the muscles are rarely, if ever, involved. Tenovaginitis is, however, more apt to occur than in chronic streptococcus infection.

Various anatomical types of chronic infectious arthritis may occur, which doubtless depends upon the degree of bacteriema, the degree of virulence of the infectious organisms, the resistance of the tissues and the fact that the mode of infection is hematogenous. Consequently we may have a periarthritis, a synovitis, an osteo-arthritis or a panarthritis. Any or all of these types may exist in the same individual.

In addition, the enlightening experiments of Faber should be mentioned, who found that it is possible to reproduce in rabbits arthritis only after previous sensitization with killed or living bacteria that had been injected into or around the joint, and that it was possible to produce extensive destruction of tissue if the anaphylactic reaction with the specific microorganism could be obtained, and thus the experiments of Cecil are of importance. He found that the injection of non-hemolytic streptococci into vitally stained rabbits was followed by the development of arthritis similar to the arthritis of acute rheumatism and changes differing from an acute to a process which resembled chronic deforming arthritis could be demonstrated. These tend to substantiate the bacterial theory of chronic rheumatic processes.

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DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

(Devoted to the advancement of Pharmacy and its allied branches; to the work of the Council on Pharmacy and Chemistry of the American Medical Association, and to matters of interest bearing upon the therapeutic agents offered to the medical profession. The editor will gladly supply available information on matters coming within the scope of this Department.)

NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Nonofficial Remedies, 1916, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Formin Tablets, 5 grains.—Each tablet contains 5 grains of formin (see New and Nonofficial Remedies, 1916, p. 138). Merck & Co., New York.

Formin Tablets, 7½ grains.—Each tablet contains 7½ grains of formin (see New and Nonofficial

Remedies, 1916, p. 138). Merck & Co., New York.

Veronal Tablets, 5 grains.—Each tablet contains 5 grains of veronal (see New and Nonofficial Remedies, 1916, p.. 92).

Urease.—An enzyme found in certain beans, fungi and micro-organisms which, in the presence of water, converts urea into ammonium carbonate. It is used in the determination of urea in the urine, blood and other body fluids, either by determining the increase in alkalinity of the fluid to which it is added, or else the ammonia produced by it in the fluid is removed and estimated.

Urease-Squibb.—A standardized preparation of urease obtained from the jack bean. It is supplied in the form of powder and tablets containing 0.1 gm. E. R. Squibb & Sons, New York.

Neutral Solution of Chlorinated Soda.—Solution Chlorinated Soda, Dakin.—Solution Chlorinated Soda, Carrel-Dakin.—A chlorinated soda solution, containing 0.43 to 0.48 per cent. of available chlorine, free from caustic alkali. It is prepared by treating a suspension of chlorinated lime in water with definite amounts of sodium carbonate and sodium bicarbonate and adjusting the separated clear liquid to the required content of available chlorine. The solution is not reddened by phenolphthalein. It must be protected from light. The solution has been used for the irrigation of wounds, especially infected war wounds.

Theobromine-Merck.—A brand complying with the standards for theobromine—N. N. R. Merck & Co., New York.

Barium Sulphate, P. W. R. for X-Ray Diagnosis. —A brand complying with the standards for barium sulphate for Roentgen-ray work—N. N. R. Powers-Weightman-Rosengarten Co., Philadelphia.

Barium Sulphate, Merck for X-Ray Diagnosis.—A brand complying with the standards for barium sulphate for Roentgen-ray work—N. N. R. Merck & Company, New York. (Jour. A. M. A., Jan. 13, 1917, p 121.)

Acetylsalicylic Acid.—Acidum acetylsalicylicum. Aspirin. The acetyl derivative of salicylic acid. Dosage: 0.3 to 1.0 gm., repeated once in 3 hours until symptoms of salicylism are noted. It may be dispensed as powders (in wax paper), wafers or capsules.

Iocamfen.—A liquid obtained by the interaction of iodin 10 parts, phenol 20 parts, and camphor 70 parts, containing about 7.25 per cent. free iodin. Iocamfen is said to have the antiseptic and germicidal propertries of iodin and also the analgesic, stimulating and antiphlogistic properties of camphor and phenol. It is used in dressing wounds, etc. Iocamfen is also supplied as Iocamfen Ampules. containing 20 minims iocamfen. Schering and Glatz. New York. (Jour. A. M. A., Jan. 20, 1917, p. 199.)

ITEMS OF INTEREST.

Toxicity of Salvarsan and Neosalvarsan.—Claude L. Shields, M. D., Salt Lake City, reports that out of the last twenty-three injections of neosalvarsan four cases exhibited severe poisoning and one resulted in death. He reports that experience of other physicians of severe toxic symptoms from the use of recent shipments of salvarsan and neosalvarsan. (Jour. A. M. A., Jan. 6, 1917, p. 53.)

The Search for the Ideal Antiseptic.—R. A. Lambert has followed the effect of the same chemical agent on bacteria and tissue cells growing together in vitra. He finds that the growth of tissue cells is more easily affected by potassium cyanide, phenol, tricresol, hydrogen peroxide and alcohol than was the growth of bacteriae. Iodin stands out as the one chemical tested to which tissue cells were found more resistant than were staphylococci. A good growth of cells was seen after exposure to a 1 in 2000 solution of iodin for an hour—a strength sufficient to sterilize the tissue completely in most instances. Lambert points out that the power of iodin to dissolve fibrin may be an objection to its use as an antiseptic wound dressing. (Jour. A. M. A., Jan. 6, 1917, p. 40.)

Iron Citrate, Green.—H. K. Mulford Company and E. R. Squibb and Sons submitted to the Council on Pharmacy and Chemistry ampules containing solutions of iron citrate, green. It thus became necessary for the Council to consider the eligibility of iron citrate, green, itself for admission to New and Nonofficial Remedies. As the rules of the Council provide that non-essential modifications of official or nonproprietary preparations will not be recognized, the above-named firms were asked to state what advantage, if any, the so-called iron citrate, green has over the official iron and ammonium citrate. Inasmuch as no evidence was presented to show that iron citrate, green has any advantage over the well-known iron and ammonium citrate, the Council held that iron citrate, green and with it the dosage forms, were ineligible to New and Nonofficial Remedies. Advised of this decision, the Mulford Company replied that in the present case it felt bound to supply the existing demand. Squibb and Sons replied that, to give the Council its support in this matter, the sale of iron citrate, green and ampules thereof would be discontinued. (Jour. A. M. A., Jan. 13, 1917, p. 135.)

Acetylsalicylic Acid, Not Aspirin.—While Aspirin-Bayer has been omitted from New and Nonofficial Remedies, the product is retained under its scientific name, acetylsalicylic acid, and standards are provided to ensure the reliability of the market product. The Aspirin patent expires in February, 1917, and after this time other manufacturers may make and sell the product. One firm's brand, that of the Powers-Weightman-Rosengarten Co., has been accepted for New and Nonofficial Remedies, 1917. Hereafter physicians, when prescribing the compound, should use the scientific name "acetylsalicylic acid." (Jour. A. M. A., Jan. 20, 1917, p. 201.)

Aspirin-Bayer Omitted from N. N. R.—Aspirin-Bayer is advertised to the public, indirectly by means of "vest-pocket" boxes bearing the name "Aspirin" permanently affixed, and directly by means of extensive newspaper advertising. Inasmuch as this advertising propaganda is an infringement of the rules of the Council and is against the interests of public health, the Council voted to omit Aspirin-Bayer from New and Nonofficial Remedies. (Jour. A. M. A., Jan. 20, 1917, p. 213.)

More Misbranded Nostrums.—Chiefly because of unwarranted therapeutic claims, the following "patent medicines" were found misbranded under the Federal Food and Drugs Act: Goff's Cough Syrup, a syrup containing some vegetable extractive and traces of iron, iodids, antimony and alkaloids.—Goff's Herb Bitters, a water-alcohol solution of aloes, sugar and alkaline carbonate flavored with peppermint.—Dander-Off, an alkaline solution of borax and white arsenic colored with coal-tar dye. —Tu-Ber-Ku, a tuberculosis cure containing 20 per cent. alcohol.—Electrozone, claimed to contain or to liberate ozone.—Orange Blossom Female Suppositories, containing boric acid, aluminum salt, sulphate, potassium salt, sodium salt, starch and petrolatum.—Dr. Simpson's Vegetable Compound, essentially an alcohol-water solution of potassium iodid with a small amount of vegetable extractive in which podophyllum, licorice and gentian were indicated.—Weller's Stone Root and Gin, containing 37.5 per cent. alcohol. (Jour. A. M. A., Jan. 13, 1917, p. 135.)

More Misbranded Nostrums.—The following "patent medicines" have been declared misbranded under the U. S. Food and Drugs Act, chiefly because unwarranted curative claims were made for them: Dr. Thatcher's Liver and Blood Syrup, claimed to cure all liver complaints and many other

ailments.—Black's Pulmonic Syrup, a water-alcohol solution of ichthyol, glycerin and sugar.—Walker's Pain Destroyer, an alcoholic solution of oil of mustard, chloroform, opium and collodion.—Musterole, a mixture of lard or some similar material with oil of mustard, menthol and camphor.—Snyder's Bitters, claimed to eradicate scrofulous humors, syphilitic affections, cancerous humors and many other ailments.—"5 Drops," a mixture of eucalyptol (or a eucalyptol-containing oil), camphor, safrol, terpineol and eugenol (or an oil containing those ingredients, such as camphor oil).—Dr. Stuart's Specific Drops, a mixture of camphor, alcohol, mercuric iodid and turpentine. (Jour. A. M. A., Jan. 20, 1917, p. 214-215.)

Casta-Flora.—The Council on Pharmacy and Chemistry reports that Casta-Flora, put out by the Wm. S. Merrell Chemical Co., is one of those complex preparations which are offered to the medical profession with plausible arguments in support of the claims made. The Council finds the claims made for this mixture of drugs—which is said to contain or represent chestnut leaves, passion flower, gelsemium, elecampane, "fodized lime," menthol and yerba santa—and for the individual ingredients thereof, extravagant and misleading. Even if the ingredients, or certain of them, were useful in the treatment of those conditions for which Casta-Flora is recommended, no one could possibly foresee the effects in any given case from this jumble of drugs. The Council holds that the prescribing of such mixtures, the action of which cannot be foreseen, is plain charlatanism and declares Casta-Flora inadmissible to New and Nonofficial Remedies. (Jour. A. M. A., Jan. 27, p. 303.)

THE JANUARY MEETING OF THE STATE BOARD OF HEALTH.

The State Board of Health held its regular monthly meeting in Sacramento on January 6, 1917. There were present President George F. Ebright and Doctors Edward F. Glaser, Adelaide Brown, Robert A. Peers and Wilbur A. Sawyer.

The board discussed public health legislation and placed its approval on the proposed acts creating state health districts and enabling communities to join together to form a local health district for the purpose of maintaining a health department under a full-time health officer. Approval was given to a number of other measures.

A resolution was passed that the ruling of the State Board of Health to the effect that sewage or sewage polluted water shall not be used for irrigating vegetables shall not apply to the irrigation of sugar beets.

Permits were given to the cities of Escondido and Redlands and to the St. Helena Water Company to supply water for domestic purposes.

A permit was given to the city of San Diego to discharge sewage from Ocean Beach into False Bay near its outlet into the Pacific Ocean.

The board decided that the State tuberculosis subsidy should not be paid for any period during which the patient was not actually in a tuberculosis ward which is on the accredited list.

One nurse was granted a certificate as registered nurse through reciprocity. Twenty-one hospitals, having been inspected and found to meet the requirements of the board in full, were placed on the list of permanently accredited schools.

The food and drug cases were heard and action taken. Citations had been sent in 126 cases of alleged violation of the Foods and Drug Acts. A committee consisting of the Secretary of the Board, the Director of the Bureau of Foods and Drugs, and the Attorney for the Board, was appointed to investigate the handling of eggs by wholesalers, with a view to determining why so many stale eggs were being sold as fresh eggs in violation of the law.

W. A. SAWYER, Secretary.

THE FEBRUARY MEETING OF THE STATE BOARD OF HEALTH.

The regular monthly meeting of the State Board of Health was held in Sacramento on February 2 and 3, 1917. The following members were present: Drs. George E. Ebright, president; Fred F. Gundrum, Edward F. Glaser, Adelaide Brown, Robert A. Peers and Wilbur A. Sawyer. The meeting extended through the evening of February 2 and the forenoon of February 3.

The case of a physician, who had taken down a quarantine sign for scarlet fever without authorization by the health officer, was considered and closed. The physician's attorney had appeared before the Board and a communication had been received from the physician, stating that he had no intention to disregard the quarantine laws or usurp the authority of the local health officer.

By formal resolution, a certificate as registered nurse was denied to Bertha Eastland on the ground that she had not appeared and passed the required examination in person, but that she had been impersonated at that examination by some unknown person, and, when given an opportunity to appear before the Board and deny these facts, she had failed to make her appearance.

A certificate as registered nurse was granted to one applicant through reciprocity. Seventeen training schools for nurses, having been inspected by the Director of the Bureau of Registration of Nurses and found to meet the requirements of the Board in full, were placed on the list of accredited schools.

After considering the affidavit of a local deputy registrar, who had been charged with violation of the state registration act inasmuch as he had issued a burial permit for a death occurring outside his jurisdiction, the Board dismissed the case with reprimand and warning.

After a hearing, the Board, on the recommendation of the Bureau of Sanitary Engineering, issued a permit to the Marin Municipal Water District to supply water to the consumers within the district, provided that rules for the protection of the watershed be enforced. Permits to supply water were granted also to the San Jose Water Works to supply water to San Jose, Los Gatos, Saratoga and contiguous territory; and to the Union Water Company to supply water to San Leandro and the Elmhurst and Fitchburg districts of Oakland. A permit was given to the Colony Holding Corporation to dispose of sewage through underground tile near Atascadero Creek.

On the recommendation of the Director of the Bureau of Tuberculosis, the newly constructed tuberculosis ward of the Shasta County Hospital was placed on the list of hospitals eligible for the state tuberculosis subsidy.

Many other minor matters were considered and acted upon.

Hearings were held in a number of cases of alleged sale of stale eggs as fresh eggs and most of these were referred to district attorneys for prosecution. Numerous other food and drug cases were considered after due hearing and were passed upon according to their merits.

W. A. SAWYER, Secretary.

BOOK REVIEWS

Applied Immunology. The practical application of sera and bacterins prophylactically, diagnostically and therapeutically, with an appendix on serum treatment of hemorrhage, organotherapy and chemotherapy. By B. A. Thomas and R. H. Ivy. 2nd edition revised. Philadelphia: J. B. Lippincott Company. 1916. Price $4.00.

The appearance of a new edition of this handbook of immunological methods shows that it has been found widely useful. Very few alterations in the text have been found necessary.

Physics and Chemistry for Nurses. By Amy Elizabeth Pope. New York and London: G. P. Putnam & Sons. 1916.

This volume is a compilation from various books on physics and chemistry. The bibliography promised in the preface was not found. The book contains 426 pages of which 146 pages are devoted to physics and physical chemistry, 59 to chemical reactions and procedures, and the remaining 221 pages to special subjects such as the chemistry of cleaning, textiles, digestion, and many other processes. Seventy-three laboratory experiments are inserted in the various chapters. The preface is poorly written. There is a good general index, glossary, and index to laboratory experiments.

The material is evidently taken from good sources with the exception of the chapter on urine analysis. The definitions in this chapter (such as the one for casts) are not comprehensive or accurate.

To give nurses a grasp of the difficult subject of physics and chemistry in the time and with the equipment allotted to instructors even in the best hospitals is a difficult undertaking. The author of this volume has certainly made the subject attractive in the arrangement of the material. The book should be in the library of every training school for nurses. R. C. J.

A Manual of Otology. For Students and Practitioners. By Charles Edwin Perkins, M. D., F. A. C. S., Professor of Clinical Otology in New York University and Bellevue Hospital Medical College; Associate Aural Surgeon to St. Luke's Hospital; Assistant Aural Surgeon, New York Eye and Ear Infirmary; Fellow, American Otological Society, New York Otological Society, New York Academy of Medicine, etc. Phila.: Lea & Febiger. 12mo, 445 pages, with 120 engravings. 1916. Cloth, $3.00, net.

Rarely does a small manual of otology fall into the hands of the reviewer that proves itself so thoroughly satisfactory in all respects. A student should find two things in a book of this sort:

First—The various methods of treating the more common ear complaints, such as middle ear catarrh, mastoid diseases, etc., should be handled in a clear-cut and positive manner. The recommendations must be based on actual clinical experience and be absolutely reliable.

Second—The subject of the labyrinth and its complicated symptomatology must be presented in such a way that the student will not be swamped with theoretical considerations, but feel that he is grasping the underlying principles from the hands of a teacher who has mastered and properly digested the literature. These requirements the author has splendidly fulfilled.

The functional ear tests; the explanation of the Rinne test and bone conduction, the use of tuning-forks, etc., are also presented in lucid style.

The author classifies the non-suppurative diseases of the middle ear and eustachian tube in an original and very practical way. Tubal catarrh, with abnormal drum, he distinguishes from tubo-tympanites or tubo-tympanic congestion, a very necessary clinical distinction. Otitis media catarrhalis chronica he divides into an exudative and hyperplastic type. To the thoroughly discouraging subject of otosclerosis he brings new light as to diagnosis and treatment.

One turns with great interest to the chapter on the labyrinth. This complicated subject he handles with a master hand, and even an advanced student could not go far wrong in digesting the didactic possibilities of this part of the book. H. H.

Blood Pressure, From the Clinical Standpoint. By Francis Ashley Faught, M. D. Formerly Director of the Laboratory of Clinical Medicine at the Medico-Chirurgical College, Philadelphia. Second edition, thorough revised. Octavo of 478 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1916. Price, $3.25 net.

The rapid appearance of the second edition of this greatly enlarged and comprehensive volume has shown the decided interest manifest by the profession in seeking the solution of the many intricate questions relative to the arterial system.

The author covers his subject in a lucid, logical and direct manner, emphasizing his personal deductions, followed by an excellent summary with ample references to the most important literature which has appeared upon the subject. H. A.

Simplified Infant Feeding, with 75 illustrative cases. By Roger H. Dennett. 14 illustrations. Philadelphia and London: J. B. Lippincott Company. 1915. Price $3.00.

With the issuing of every book on infant feeding, the first thought that arises in one's mind is: What is the object of the author? Does he present something new or is it a compilation of what is already known? To be honest, the latter feeling prevailed in the critic's mind when he was asked to review Dennett's book on Simplified Infant Feeding. But a careful reading of the book shows that the author, while he presents very little that is new, has his subject well in hand. His manner of presentation is very convincing, and it was exceedingly gratifying to note the emphasis which the author put on some of the facts not appreciated sufficiently by members of the profession, thus making his book worth while and acceptable. His stand with regard to sugar, in its relation to bottle-fed babies, is extremely good. The average practitioner, while he is cognizant of the fact that high percentages of sugar will cause intestinal upsets, does not seem to appreciate that smaller percentages will tend to aggravate an existing indigestion that is primarily due to sugar. If, as in fat or starch indigestion, we put a patient on a fat free or starch free diet, there is no reason why a child should not be put on a sugar free diet, when sugar is the offending element of the diet.

The case teaching aspect of the book is especially good, and ought to prove of considerable value.

There is one thing that the author has omitted which, according to the mind of the critic, ought to be incorporated in such a book, namely, the microscopical examination of stools. It is almost impossible to treat a fatty diarrhoea scientifically unless the stools be examined daily for the pres-

ence of free fat. Undigested starch granules can only be detected by microscopical examination.

The critic feels that more stress should have been put on the examination of the mouth, especially for the detection of infected tonsils and adenoids, because of their close relation to the alimentary tract and their influence upon it.

In spite of these minor deficiencies, the book may be read with much profit by the pediatrician or general practitioner. A. E. M.

Hygiene in Mexico. A study of sanitary and education problems. By Alberto J. Pani. Translated by Ernest L. de Gogorza. New York: G. P. Putnam's Sons, 1917. Price, $1.50.

Just at this time when we are all so much interested in our neighbor to the south, comes a monograph dealing with the life, customs, habits, etc., of the people living in the City of Mexico. This study was evidently prompted by the enormous mortality among the three-quarter million inhabitants of the city. This averages about 46 per thousand from 1895 to 1912, about three times what it is for cities of similar size in the United States and Europe.

The survey gives a most comprehensive insight into the topography, climatology and other physical factors governing the conditions of living; then proceeds to take up the elements that man is responsible for, wages, nutrition, housing, transportation, and, most important of all, education.

The recommendations made are mostly along the line of efficient organization of the sanitary administration and the intellectual, moral and economic improvement of the people.

While such a small volume is rather curt in its enumeration of facts, the writer is to be congratulated on the completeness with which he has portrayed the conditions under which the great bulk of the population struggles. There is that regard for scientific accuracy and balance with, at the same time, a personal note of warmth and real humane interest that distinguishes the work and makes it valuable as a model for studies of similar nature.

The reviewer warmly recommends the book to all who are interested in problems of public health, hygiene, sanitation, and social and educational methods. G. H. T.

Personal Health; a Doctor Book for Discriminating People. By William Brady. Philadelphia and London: W. B. Saunders, 1916.

We have been much pleased to find a refreshing exception from the usual doctor book in this sane and concise, up-to-date volume. The author treats his subjects in 22 chapters embracing the general and special hygiene of the various parts of the body.

Commencing with teeth and mouth he gives advice on the preservation of the healthy, and treatment of unsound teeth, and issues a brief but strong warning concerning the influence of ulcerated septic teeth upon the general health in accordance with modern views. Emetin is recommended in the treatment of pyorrhea alveolaris; canker and cold sores of the mouth are discussed; the importance of saliva and the salivary glands pointed out; and the tonsils, as to their value as a protective bar against germ invasions, are considered. Brief remarks on throat infection, the dangers from mouth carriers of disease germs, on tonsillitis or quinsy sore-throat and a final short therapeutic summary closes the chapter. The second chapter is devoted to the ever popular "catching cold," its exclusive dependence upon invading germs and its prevention by isolation or, more correctly, separation. Treating of adenoids and tonsils, their anatomy and pathology, he gives quite a rap on the knuckles of the non-hygienic school teachers for their lack of understanding or action on the laws of ventilation in school rooms. He ends with a word of recommendation of radical operation of both tonsils and for adenoids in advanced cases.

Catarrh as a misnomer for many other ills, as adenoids, polypi, sinusitis, etc., comes in for the next discussion. The various forms of rhinitis and their contributing causes, as overeating and drinking, with consecutive obstruction of the portal system, as well as bad ventilation, are all touched in good order and each one receives intelligent and adequate mention.

Many interesting hints are given in the chapter on the eyes, vision and illumination. It tells in a brief manner of their mechanical and optical physiology and the ordinary pathology, as foreign bodies, conjunctivitis, iritis and ophthalmia neonatorum. Later on trachoma, catarrh, glaucoma, eye-strain and the fitting for glasses, including the various defects of vision, are briefly treated and the use of injurious stimulants and drugs is considered. A few sound words of advice as to conservation of vision and the influence of illumination thereon ends this interesting chapter.

A similar discussion of the auditory apparatus, its anatomy and physiology also gives a condensed abstract of its more common pathology. A very rational airing of the current views on ventilation of our living quarters and their heating by various methods follows, and considerable space is devoted in this chapter to a good-natured criticism of some flagrant contradictions on the acquisition of colds in Rosenau's "Preventive Medicine and Hygiene."

In the eighth chapter attention is paid to the matter of breathing. After ruthlessly destroying a few pet lay theories of breathing and its relation to individual health, the composition of air and atmospheric pressure is told. The effects of high altitude, of increased pressure and of drafts are illustrated, and the effects of warm and cold air discussed. The part which temperature plays in the welfare of individuals is mentioned, the odor and nuisance of decaying matter is reduced to its real value and stripped of popular fear of sanitary injury. Finally outdoor and indoor dust, costal and abdominal breathing and their hindrances by corsets and belts, the influence of climate and the advantage of modern air baths are all included in an able and plain presentation.

The integumental tissues and their functions command the interest for the next chapter. Perspiration, normal and pathological action of the sebaceous glands, the more common skin diseases, the care of the scalp, hair and nails, with recipes for hair dyes and remedies against dandruff and

some of the ordinary ailments of the nails, form the contents of this chapter.

Our clothing and its hygienic influence is the theme of Chapter X. It contains some advice about underclothing, a very sensible warning against coddling, rational objection against hard-banded and unventilated hats, a severe condemnation of corsets and belts and some precepts about shoes and the advisability of rubber heels. A very long chapter, the eleventh, is filled by a talk on digestion, metabolism and nutrition. The definition of hormones and metabolism occupy the initial pages, followed by a forceful warning against overeating and an explanation of the real causes of suffering and pains usually ascribed to indigestion. The digestive index of certain foodstuffs, the test meal and hyperacidity are preliminaries to brief paragraphs on dilatation, ulcer and cancer of the stomach, a discussion on the quantities and character of foods to be eaten at meals and the value of some foodstuffs precedes a short presentation of various pathological conditions as gall-stones, diarrhoea, dysentery, and finally, of piles.

The treatment of constipation by drugs and flushings of the colon, a brief description of mucous colitis, piles, and obstruction of bowels and its causes, as well as an extremely sane plea for the radical operation for rupture, closes this interesting chapter. Auto-intoxication and arterial disease, including the significance of blood-pressure, form the subjects of Chapter XII. The colon bacillus and its pathogenic activities, the causes, symptoms and effect of high blood-pressure, its relation to arteriosclerosis, and the meaning and dangers of this latter condition, as well as remedies and measures directed against the disease, fill its pages. The next chapter, continuing in a similar line, treats the heart and blood. A qualitative and quantitive description of the blood, and of the blood count, to which its various interpretations are added, opens the chapter, then follows a brief mention of the faulty compositions of the blood with a few words about iron as a remedial agent. The heart, its structure and action, its reserve power and some nervous heart disorders and heart poisons, as tobacco, alcohol and some coal-tar products, are discussed at the end.

"What is the import of under and over-weight?" the author asks next and answers it with tables of normal weight and height, and directions for acquiring or losing flesh.

Diet and exercise are recommended as helpful in either case; their variations as to the effect desired, fully and clearly explained and a final warning added against the indiscriminate use of dangerous remedies for obesity.

Disorders of the nervous system, the three great plagues, the inside of the chest, cough, etc., form the contents of the next chapter.

Antenatal care, early discipline as a preventive of the child's acquisition of troublesome and injurious habits, school education not to begin before the ninth year, prohibition of night studies for children under 15 years, insistence upon hygienic school-rooms and school accommodations are all briefly presented with convincing force as necessary conditions for the preservation of the child's physical and mental health. Most of the more common and some of the rarer disorders of the nervous system and the three great plagues, tuberculosis, cancer, and venereal diseases, are briefly treated in a clear and intelligent manner. If I have said intelligent, I must modify the statement as to venereal diseases, for an introductory paragraph under this heading reads as follows: "Our interest in the black peril here extends only to the innocent victims. We shall leave **'the guilty offenders'** (the black is mine) to discover the light elsewhere, but surely it is our duty to teach the truth to the innocent victims of this terrible disease." Evidently the good doctor goes out of his way to brand as criminal any gratification of sex desire that is not sanctified by state or church, a rather puerile view for a twentieth century medical man!

Now tuberculous affections of the respiratory organs receive a brief but sufficient consideration and lead the way to an iconoclastic chapter on personal sanitation. It contains the correct information about the spreading of contagious disease germs and disease carriers, human and otherwise, and some instructions how to avoid infection with aseptic rather than with antiseptic measures.

An eulogistic chapter on the family doctor, gives directions concerning the ethical conduct toward him and leads to a lengthy chapter on miscellaneous major and minor ills, an alphabetically arranged selection of maladies, with remedies for each, a first aid in emergencies and the composition of a family medicine cupboard with the methods of application of a few of the remedies, form the concluding chapters and appendix of this useful and well written book. It deserves very early a second edition and the author may see fit then to add some illustrations to render anatomical and other technical names and terms more intelligible for lay minds.

We have written a rather lengthy review in order to induce our readers to recommend this book to anxious mothers as a sane directive for the educational treatment of the young and the preservation of health, and only regret that we have to point to that paragraph in the "black peril" as the only "black spot" in an otherwise admirable book for its purpose. J. R.

DOCTOR WILLIAM WATT KERR.

AN APPRECIATION.

[Read at a dinner given by some friends on the thirty-fifth anniversary of Doctor Kerr's coming from Edinburgh to San Francisco to practice medicine.]

Fare far your honest, honest face!
Right welcome, ye, in ony place.
God knows ye set a worthy pace
To college proctors,
And for your gentle Scottish grace,
Beloved by doctors.

It's mony a year syne ye cam' West,
Determined then tae do your best,
To cure all ills and pain arrest,
Amang the sickly,
Wi' skill an' wit, I can attest,
Ye did it quickly.

Combining art and science rare,
An' giving a' ye had to spare
To student laddies wheresoe'er
The spot they cam' frae.
"Auld Reekie's" knowledge ye did share
And not unkindly.

Ye cunning diagnostic man!
What need ye for a phlebogram
Or e'en electro-card 'ogram
To mak' ye right?
For a' such things ye care a damn
An' I'm polite.

J. Wilson Shiels.

SAN FRANCISCO POLYCLINIC POST-GRADUATE EXTENSION LECTURES.

(Notice to Secretaries of County Societies: During the present year the members of the San Francisco Polyclinic staff are prepared to give the following lectures to the County Societies throughout the state. For information apply to Dr. H. D'Arcy Power.)

Medicine.

Dr. P. K. Brown:
1. "Relation of the Doctor to the Health Insurance Plan."
2. "Mental Diseases in Private Practice."
3. "Manifestations of Arterial Deterioration."

Dr. H. D'Arcy Power:
1. "Intestinal Sub-digestion."
2. "The Liver in Chronic Diseases."
3. "The Dropsies and Their Treatment."

Dr. H. Kronenberg:
1. "Intermittent Claudication of the Upper and Lower Extremities."
2. "Diagnostic Methods of the Gastro-Intestinal Tract."

Pediatrics.

Dr. S. Blum:
1. "Rhino-Pharyngitis in Infancy and Childhood."
2. "Systemic Infection in Childhood."

Surgery.

Dr. H. A. L. Ryfkogel:
1. "Treatment of Infections."
2. "Theory and Use of Bone-Grafting."
3. "The Surgical Treatment of Gastrical Ulcers."

Dr. G. Barrett:
1. "Gastro Jejunal Ulcer Following Gastro-Enterostomy."
2. "Technique of Gall-Bladder Surgery."
3. "Operations for Umbilical Hernia."

Dr. S. Bunnell:
1. "Treatment of Infections."
2. "Practical Points in Accident Surgery."

Genito Urinary.

Dr. M. Krotoszyner:
1. "Upon the Diagnosis and Treatment of Early Stages of Hydronephrosis." (Lantern Slides.)
2. "Bladder Tumors: Their Early Diagnosis and Modern Treatment."
3. "Present Status of the Sero-Diagnosis and Treatment of Gonorrhea."

Gynecological Urology.

Dr. W. E. Stevens:
1. "Modern Diagnosis and Treatment of Urinary Lithiasis."
   (a) Kidneys and Urethra.
   (b) Bladder and Urethra.
2. "Functional Kidney Tests."
3. "Modern Treatment of Syphilis."

Eye.

Drs. A. S. and L. D. Green:
1. "The Treatment of Cataracts." (With Moving Picture Demonstrations.)

Ear.

Dr. C. F. Welty:
1. "Report on Some Interesting Ear Cases."
2. "A Series of Sinus Thrombosis Cases."
3. "Performance of Tonsil Operations under Local Anaesthesia on Grown People."

Orthopedics.

Dr. J. Watkins:
1. "The Modern Treatment of Tuberculosis of the Spine."
2. "The Modern Treatment of Ununited Fractures."
3. "Operations for Defects of the Hip Joint."
4. "Operations, which have stood the test of time, can properly be employed in the Treatment of Deformities following Infantile Paralysis."

To the Editor,

California State Journal of Medicine.

The "Ambrine" Treatment.

On the second of August last year the Outlook published an account of the treatment followed in the French army, or rather, I should say, in a particular hospital dealing with army cases, in the matter of severe frost bites and deep burns. It described in terms that savored of exaggeration the wonderful results obtained by the use of a compound invented by and used under the supervision of Dr. Barthe de Sandfort at the St. Nicholas Hospital of Issy-les-Moulineaux. The article in question was later most unfortunately severely criticised by the Journal of the American Association. I say unfortunately, for the reason that the condemnation there imputed is refuted by the fact that Dr. Carrel has given, as a result of his experience, unqualified praise of the treatment, which has also been made obligatory in the surgical department of the English army service.

The basis of the method is the application of a mixture consisting of white wax, paraffin and resin applied hot to the previously cleaned and dried burned surface, the material being either brushed on or sprayed in the case of face or very deep wounds. No particulars as to the proportions were given in the article referred to, nor, as far as I know, have they been since revealed. But the idea appealed to me as eminently sensible, apart from any question of the praise given by the lay press, and I therefore proceeded to experiment, with the view of getting a workable proportion, and after trying, first, equal parts of the three ingredients, and finding the mixture too hard, I tried other arrangements, until I got a mass consisting of three and a half parts of white wax, three and a half of paraffin and one part powdered resin, the whole heated until clear, and passed through cheesecloth. This sets very hard, but melts readily in hot water, and can be applied either by a brush or by spraying through a hot vaseline spraying apparatus. We made this mixture within a few days after reading the article, and tried it out partly on cases in the City and County Hospital, and partly in my private practice.

Now, as to results in the San Francisco Hospital, I used it on a case of gangrenous extremities, the patient suffering with diabetes, there also being quite deep ulcerations of the skin. They had been quite resistant to treatment before, but completely healed in the course of a couple of weeks. Other cases treated by some of my colleagues, I believe, gave equally good results. Amongst the cases I treated in my private practice was one of the most extensive and deep bed sores, the patient suffering with arteriosclerotic dementia. These sores in the back extended through all the tissues and involved the muscles; one in the heel exposed the os calcis. They had been previously treated by all the usual methods employed in such cases, with no success. The deepest, after washing with alcohol and drying with warm air, was thoroughly painted with the mixture and the painting repeated every twenty-four hours. It is well to state here, for those who have not used the method, that the application, after setting, is completely impervious to air or moisture, and does not readily leave the skin until one of the edges is raised, when the whole

mass peels off without any adhesion whatever, causing absolutely no pain in its removal.

The progress of this case was just as remarkable as that recounted by the Outlook's correspondent in the Paris experience. Within three weeks, the surfaces were completely covered, both in the back ulcerations and in the legs. I have since used the method not only in ulcerations, but for wounds, with precisely the same results.

As an internist, an excursion on my part into the surgical field may seem perhaps out of place, and I would not normally venture to express an opinion, yet in these cases the surgical conditions grew directly out of the underlying medical factors, and seeing that the matter was in controversy, at least in the minds of some, I thought it right to give this experience, as I believe there is a great future for treatment based on these lines.

H. D'ARCY POWER.

January 22, 1916.

PROPOSED AMENDMENT TO THE CONSTITUTION OF THE SOCIETY.

Proposed Amendment to the Constitution of the Medical Society of the State of California. (See page 100 of the 1916 State Medical Directory.)

The amendment deals with the first sentence of Article VI of the Constitution, relating to officers, and omits two assistant secretaries, and adds three councilors-at-large, so that this sentence of Article VI will read as follows:

"Section 1. The officers of this Society shall be a President, a First Vice-President, a Second Vice-President, a Secretary, a Treasurer, Examiners or nominees for appointment as members of the Board of Medical Examiners, as may be required by the laws of the State of California governing the practice of medicine, and fifteen Councilors, of whom one shall be elected from each of the nine councilor districts, and six Councilors-at-Large."

The remainder of the Section and Article to remain as it now reads.

[Reprinted from the Journal of Sociologic Medicine, Vol. XVII, No. 6. December, 1916.]

McINTIRE PRIZE.

Last year Dr. Charles McIntire resigned the secretaryship of the American Academy of Medicine after twenty-five years of faithful service. In appreciative commemoration the American Academy of Medicine decided to raise a fund, the income of which should be expended in accordance with Dr. McIntire's suggestions. As a consequence the Academy now announces two prize offers, the prizes to be awarded at the annual meetings for 1918 and 1921, respectively.

The subject for 1918 is "The Principles Governing the Physician's Compensation in the Various Forms of Social Insurance." The members of the committee to decide the relative value of the essays awarding this prize are: Dr. John L. Heffron, Dean of the College of Medicine, Syracuse University; Dr. Reuben Peterson, Professor of Obstetrics and Diseases of Women, University of Michigan, and Dr. John Staige Davis, Professor of Pediatrics and Practice of Medicine, University of Virginia.

The subject for 1921 is "What Effect Has Child Labor on the Growth of the Body?" The members of the committee to award this prize are: Dr. Thomas S. Arbuthnot, Dean of the Medical School of the University of Pittsburgh; Dr. Winfield Scott Hall, Professor of Physiology, Northwestern University, and Dr. James C. Wilson, Emeritus Professor, Practice of Medicine and of Clinical Medicine, Jefferson Medical College.

The conditions of the contests are:

(1) The essays are to be typewritten and in English, and the contests are to be open to everyone.

(2) Essays must contain not less than 5000 or more than 20,000 words, exclusive of tables. They must be original and not previously published.

(3) Essays must not be signed with the true name of the writer, but are to be identified by a nom de plume or distinctive device. All essays are to reach the Secretary of the Academy on or before January 1st of the years for which the prizes are offered and are to be accompanied by a sealed envelope marked on the outside with the fictitious name or device assumed by the writer and to contain his true name inside.

(4) Each competitor must furnish four copies of his competitive essay.

(5) The envelope containing the name of the author of the winning essay will be opened by Dr. McIntire, or in his absence by the presiding officer at the annual meeting and the name of the successful contestant announced by him.

(6) The prize in 1918 for the best essay submitted according to these conditions will be $100; that of 1921 will be $250.

(7) In case there are several essays of especial merit, after awarding the prize to the best, special mention of the others will be made and both the prize essay and those receiving special mention are to become at once the property of the Academy, probably to be published in the Journal of Sociologic Medicine. Essays not receiving a prize or special mention will be returned to the authors on application.

(8) The American Academy of Medicine reserves the right to decline to give the prize if none of the essays are of sufficient value.

The present officers of the American Academy of Medicine are: George A. Hare, M. D., Fresno, Calif., president; J. E. Tuckerman, M. D., Cleveland, president-elect; Charles McIntire, M. D., Easton, Pa., treasurer, and Thomas Wray Grayson, M. D., 1101 Westinghouse Building, Pittsburgh, Pa., secretary.

RESIGNED.

Bailey, C. H., San Francisco.
Brune, A. E., San Francisco.
Julien, E. H., San Francisco.
Montgomery, John, San Francisco.

DEATHS.

Holmgren, Chas. J., Oakland.
Haight, N. H., Sacramento.
Anderson, Alexander, San Francisco.
Wilkes, Farrington, Oakland.
Nass, Annie T., Los Angeles.
Wheeler, Chas. M., Stockton.
Cauch, Robert, Carpinteria.
Hume, Wm. Robert, Oakland.
These are all marked in index.
Clarke, Elmer A., Los Angeles.

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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. XV APRIL, 1917 No. 4

COUNTY SOCIETY SECRETARIES:

Many of you have not yet sent to the Secretary's office the list of delegates to the annual meeting. Unless you attend to this within the next week, the space allotted to your County Society will be vacant on the Official Program. To notify the office of the Secretary of the State Society who will be the delegates from your County is part of your job. Besides the Secretary, there are the members of the Committee who have the Program in charge, the Editor, and the printer. All these want your list of delegates. If you have not already done so, please send it now.

IS IT WORTH WHILE?

Authentic figures place the total registration of those entitled to practice the healing art in all its forms in California, at approximately seven thousand. These licentiates are distributed in the following groups, the figures being approximate, but substantially correct:

Regular	(about)	4,658
Homeopathic	(about)	800
Eclectic	(about)	400
Osteopathic	(about)	1,012
Prior to 1907	800	
Since 1907	212	
Drugless Healers	(about)	130
	(About)	7,000

It is stated in Article I, Section 2 of the Constitution and By-Laws of the Medical Society of the State of California that "The purpose of this Society shall be to federate and bring into one compact organization the entire medical profession of the State of California . . ." etc.

The membership of the Society is, at the present writing, about 2,700. There are somewhat more than 4,600 (excluding the few who would be denied admission) physicians eligible to membership in the Society. For some reason or other, your Society has failed to the extent of just 42% in its object, viz: "to bring into one compact organization the entire medical profession of the State of California."

What does membership in this Society mean?

What does it do for each one of you that would be of advantage to those who have not joined its ranks?

Is it worth while?

The State Society representing as it does, the only organized body of "regular" practitioners, is the spokesman of medical thought and opinion before the Legislature. The importance of this fact cannot be overestimated at this particular time, when the law-making body is considering bills which, if passed, will allow the drugless healers to have their own board of examiners; will make difficult experimental research; and will deny to school boards the right to examine pupils, thus allowing epidemic diseases to make headway and get beyond control.

The membership in the Society carries with it insurance against suits for malpractice. This feature will be reviewed at length in a later issue. It needs but to be mentioned here. Its importance is recognized by all of us. It might be added that the cost of this mutual insurance is lower than could be furnished by a commercial carrier operating for profit.

For a sum in addition to the regular dues, about half that charged by the commercial insurance carriers, a fund is maintained for the payment of indemnity in case of a judgment rendered against a participant in this fund. Membership in the Society carries with it the right to become a member of this fund.

These features, organization, representation, insurance, indemnity, to which add the subscription to the Journal, and the scientific activities of the Society, represent what membership in the Society does for each and every one of you.

There is no reason on earth why there should be 1,900 physicians in this State unaffiliated with the Society.

The American Medical Association has begun a campaign to obtain a greater membership in the county societies. You must do your part. Tell those who ought to become members what your Society does for you and that it will do just as much for him.

THE JOURNAL AND ITS PROBLEMS.

We are in receipt of numerous communications from authors of papers to the effect that papers submitted by them have remained so long unpublished, some of them more than a year. Each writer seems to feel that this office has some particular reason for withholding from publicity his particular offering.

The Journal has now sixty-one papers which have been accepted and set up in type. Of these, twenty-two were read at the State Society meeting last April, and thirty-nine before county and other societies. Up to the present time it has been mandatory that the Journal publish all papers read at the State meetings, and customary to publish all papers read at county society meetings. This has caused such an overwhelming influx of material that the printer was compelled to ask us to have no more stuff set up as his supply of type is almost exhausted, and, at the present price of metal he is unable to secure more without an unwarranted outlay of capital.

It is easily seen that if we publish four or five papers in each issue, the sixty-one papers will require a full year to print. Recognizing this condition, the Council has given the Publication Committee the right to reject any papers hereafter submitted, including those read at the meetings of the Society. No paper is ever rejected until it has been carefully considered by at least two members of the Committee. No paper is given preference in any way whatsoever, except in the case of those dealing with material that cannot be delayed. Every paper that is set up in type costs the Journal several dollars for the labor, so that if a paper is withdrawn and the "metal killed," the cost of set-up is a total loss, and we have no surplus.

The Council is about to consider temporarily enlarging the Journal so that the stagnation may be relieved. The result of its deliberations will shortly be communicated to each author. In the meanwhile we ask them to be patient.

THE PROGRAM.

The Committee on Scientific Program has this year introduced an innovation in the publication of abstracts of papers to be read, three months in advance of the date of the meeting. This new feature was accomplished by dint of much hard work and perseverance, but it was worth while.

It is now possible for each and every member to know exactly what phase of any subject the essayist will treat. Discussions will thus necessarily be on a higher plane than ever before, and the time of members will be greatly economized, as they can plan ahead so as to attend those sessions in which subjects of greatest interest to them will be presented.

The new plan is good and should be perpetuated. The gentlemen of the Committee deserve the thanks of the Society. They have earned it.

"THE JOURNAL OF UROLOGY."

Under the editorship of Dr. Hugh Hampton Young, Volume I, Number 1 of this Journal makes its bow to the profession. To quote Dr. Young, in his foreword to the volume, "The title of this publication, 'The Journal of Urology, experimental, medical and surgical,' expresses briefly the aims, hopes and ambitions of the editors. . .

"It is therefore evident that some common meeting place is extremely desirable—some medium in which all types of papers upon the field of common interest may appear—archives of Urology—historical, embryological, anatomical, biochemical, pharmacological, pathological, bacteriological, surgical and medical, experimental and clinical.

"Such is what we hope to accomplish in THE JOURNAL OF UROLOGY, and we bespeak for it the support and active assistance of all who come within the wide scope of its work.

"Realizing that authors may often desire to publish their work also in one of the more special journals, we will be glad to allow this if made simultaneously. Wishing to stimulate investigation, we are fortunate in being able to make use of the generosity of a friend in the shape of a 'Research Fund,' which will be utilized to assist worthy authors of the most meritorious research papers, to be decided by a special editorial committee."

The first number meets the self-imposed conditions in a most admirable manner. The scope of the articles is extremely wide, embracing the fields of tumor cultivation (Burrows, Burns and Suzuki), embryology (Young and E. G. Davis), bacteriology (Thomas and Harrison), biochemistry (Mosenthal and Hiller; D. M. Davis), physiology (Macht), and surgery (Keyes, D. M. Davis and Gorton).

The "Journal of Urology" will have no slight influence upon the advance of our knowledge of the urinary and genital apparatus from all points of view; and we may also look to it for a useful correlation of already existing, but now widely scattered and unusable data.

The "Research Fund" deserves special mention. The "generosity of a friend," which made this feature of the Journal possible will be repaid many times, and with interest, in the products of the labor of the investigators it is destined to assist.

Our congratulations and our wishes that this notable addition to sound medical literature will be handsomely supported.

ON PREPAREDNESS.

This nation is entering—nay, has entered—upon parlous times. What the end will be, or when it will come, no man nor group of men can foretell. From every corner of the land comes word of a feverish activity in every field of social endeavor toward a belated national preparedness. In this movement, the medical profession, true to its ideals, has been no mean participant. All over these United States at strategi-

cally effective points hospital units have been formed. The best appointed hospitals, together with their entire staffs, have enrolled themselves as members of the American Red Cross which, in time of war, becomes automatically a part of the medical service of the Army and of the Navy of the United States. But important as it is, this is not the most important work to be done by the medical profession of our country, and numerous as they are, these men represent a numerically, but an infinitesimally small group of the medical profession as a whole.

Ours is a bountiful land. Because of its natural resources, man obtains his daily bread in greater amount and variety and at a lesser expenditure of "the sweat of his brow" than anywhere else on earth. And because of this abundance we have become the most wasteful people as a nation which has had its being since the passing of the Roman Empire. Where there has been want, except for local accidents, it has been traceable to wastefulness, to bad management or to social injustice.

The nation is about to be tried in that fire which, if unquenched, will cripple our civilization. How great shall be the sacrifices required of us as individuals or as a people, no man can know; but what we do know is that if from the beginning we husband our resources, if we do our best at once because it is our best, and do not wait till we must do it or perish, these sacrifices shall be immeasurably lessened.

On all sides rises a cry of protest against the high cost of living. Congress is importuned to appoint a commission to investigate the causes of this rise in the prices of the necessaries of life. But the public prints which publish these protests, in the same issue print a statement of the very efficient Secretary of Interior to the effect that the housewives of America are wasting annually in their kitchens food to the value of nearly three quarters of a billion of dollars. Mobs go screeching down the streets of New York, storming provision shops and waylaying guests at doors of the greater caravansaries. They demand potatoes when there are none; but when the municipality offers to provide them with rice as a substitute, they scorn the offer. They will not, they say, descend to an Asiatic standard of living.

Here in California with fully a thousand miles of ocean-washed shores and the boundless food resources of the great deep to draw upon despite the fact that the prices of meat are skyrocketing in a way which bids fair soon to be prohibitive, only the influence of the church alone induces man to partake of sea food one day in seven. The excuse given is that the man who works hard must be a beef eater.

Now all this is sheer ignorance and our great duty as a profession must be to war unceasingly on that ignorance. Because, as students of medicine we have studied the subject of food values without prejudice, judging such food staple upon its own merits, as shown by its caloric index, we of the profession know that polished rice has, weight for weight as purchased in the market, four times the food value of potatoes, and that the food value of unpolished rice is nearly one third greater still.

Bulletin No. 468, U. S. Department of Agriculture, 1917, p. 16, in discussing the food value of potatoes and other starchy foods, states, "This, however, is not the case when they (potatoes and rice) are compared in the state in which they appear on the table. When rice is cooked water is added to it, with the result that when it is eaten it is not very different in composition from cooked potatoes; thus a pound of boiled rice and a pound of mashed potatoes would have very much the same total fuel value, a fact which has been intuitively recognized by housekeepers who often use them interchangeably to serve with meats, etc." The reason for this is that water is added to the rice during the process of cooking. Rice as purchased by the housewife contains one-sixth as much water as raw potatoes. Water composes one-eighth of the total weight of uncooked rice, and six-eighths of the total weight of raw potatoes, so were she to purchase both articles at five cents a pound each she would receive, water alone being considered, 1.25 cents worth of food value in the case of potatoes and 4.375 cents worth of food value in the rice. Twenty dollars invested in uncooked rice will feed at least three times the number of persons as would the same sum invested in raw potatoes at the same price. Any difference in price is in favor of the rice.

We recognize that half the human race works harder and longer hours than any of us have to work and that they thrive despite that hard work and long hours upon a diet of which rice is almost the whole constituent. We of the profession know, because the training we have had has inculcated in us the power to think logically, that it is not what he eats, but the absence of hygiene in his way of living which warrants the contention that the Asiatic's is an inferior standard of living.

Again, we of the profession know, because we have studied it in our laboratories, that the flesh of fresh fish properly prepared compares favorably in most ways with that of animals and is not far behind it in caloric values. The waste due to the unedible head, bones, tail and entrails makes it necessary to buy about three times as much fish as round steak.

Finally, we know from the experiments of Fletcher and others that the man who "bolts" his food, who is in too great a hurry to rid himself of the discomfort of an appetite, obtains from what he eats quite 40% less nutritive value than he would did he properly masticate his food. Your slow eater eats less food to more purpose.

And as a first step in this war on wastefulness let us educate those who put their trust in us toward a true appreciation of these two great staples of which the supply is inexhaustible, the price cheap, and the food value well nigh inestimable.

We can best do this by prescribing them as

often as they are indicated as part of the regimen of our sick.

What has always been our duty has now become a patriotic rite.

From report No. 6 of Miscellaneous Series, U. S. Dept. of Agriculture, page 12, shows the nutritive matter contained in rice and other foods as follows:

Rice	86.09%
Corn	82.97%
Wheat	82.54%
Oats	74.02%
Fat Beef	46.03%
Potatoes	23.024%

FOOD VALUES OF RICE AND POTATOES.

The following extracts from reports of the U. S. Dept. of Agriculture give a comparative analysis of rice and potatoes:

	Potatoes	Rice
Water	78.2%	12.4%
Protein	2.2%	7.4%
Fat	.1%	.4%
Starch	18.5%	79.4%
Mineral Matter	1.0%	.4%
	100.0%	100.0%

THE CHARTERING OF MEDICAL TEACHING INSTITUTIONS.

Under the existing laws, any group of individuals desiring to obtain a charter for a "diploma mill" can incorporate and, by merely applying at Sacramento, can become a legally chartered school. No equipment is necessary and the whole organization can be on a paper basis only. It is by this means that various so-called "schools" in this state have been able to organize with impressive "articles of incorporation" and high sounding titles; and with an easily obtained charter, proceed to impose upon the public.

Assembly Bill No. 653, introduced by Mr. Gebhart, is designed to do away with this evil. It provides that a commission consisting of "the secretary of the State Board of Medical Examiners, the Secretary of the State Board of Health, the State Superintendent of Public Instruction, and the President of the University of California, or some one appointed by such president in his place" shall pass upon the sufficiency of the equipment of any medical school or any institution for the teaching of the healing art for which application is made to the Secretary of State for a charter, license or permit. This very excellent bill certainly ought to pass. It would nip in the bud fake teaching institutions and would not work a hardship on legitimate concerns. Had such a law been in force several years ago, we would not now have in California any of the various "drugless," or other freak schools, whose main stock in trade consists of glowing promises to the prospective student. There are numerous "graduates" of such concerns in our midst, and although their "Alma Mater" is a "legally chartered school," the diploma is worthless. These victims make up a considerable number of those trying to do away with the Medical Practice Act at each session of the legislature. Write or wire to Sacramento at once your strong approval of this bill.

MEDICAL LEGISLATION STILL THREATENING.

The State Legislature is still in session and until the latter part of April, when it is expected to adjourn, the law regulating the practice of medicine and surgery is in constant danger of being further weakened by amendments.

Your Journal has endeavored to keep you posted in regard to these matters, and if you have not done so, you are urged to read the editorials covering the subject in the January, February and March issues, and *act at once.*

Up to the present time the following extremely undesirable bills have appeared and all of them, particularly the "drugless" varieties, have strong backing in both houses:Senate Bills Nos. 24, 279, 105, 110 and 760; and Assembly Bills Nos. 1155, 95 and 57.

No doubt various undesirable amendments will be acted upon before the session is over. There is very great danger that innocent looking, but vicious "saving clauses" in the form of amendments will be inserted at the eleventh hour. The vitally important thing now is to let the Governor, Lieutenant Governor, and every individual senator and assemblyman know that the organized regular medical profession *demand that standards be not lowered.* Write or wire to Sacramento at once somthing to that effect. You might also state that the tendency all over the country is to increase educational requirements, and that California must not be the only State to take a backward step. Demand that the barriers that protect the public be strengthened rather than weakened. You might state also that we demand that the public be more fully protected against incompletely educated practitioners of medicine and surgery.

Those various sects and cults clamoring for the privilege of practicing medicine and surgery, and demanding that something be done for their particular (political) organizations, seem to ignore the fact that the sick public has rights which should come first. Is it not time that the public is considered in these matters? Do you recall the time, only two years ago, when the public was given an opportunity to vote on this very question? At that time a vicious "drugless initiative bill" (practically the same as those now being pressed before the legislature) was overwhelmingly defeated by the people. Ought not a reminder of this fact sent to your senator and assemblyman be sufficient warning for them?

The public has the right to demand that only educated, properly trained physicians be provided for them by the State. Therefore, on behalf of the public, we demand that standards be *not lowered.* The regular medical profession is not trying to

limit the number of educated practitioners, but it is trying, and will keep on trying, to have the State make it impossible for the half-educated, "diploma mill" and correspondence school "doctors" to obtain licenses to practice on the helpless sick public.

THE PROSECUTION OF QUACKS.

The right to practice medicine is received under a franchise or a license issued by the State after compliance with regulations imposed under the law. The fulfillment of the legal requirements gives the legal right under the protection of the law to practice.

It can therefore be easily understood that with the granting of this privilege or right by the state that it becomes necessary to prohibit those who have not such legal right or privilege from such practice and hence the necessity under all administrative boards having jurisdiction over licensure in medicine to maintain an energetic department to prosecute violators of the law.

The public has never been sufficiently educated upon the absolute necessity of requiring at least reasonably high educational qualifications for the practice of medicine and the new fads and fancies which obtain a hold upon the public from time to time makes it extremely necessary to conduct the prosecuting department with the force and energy that will result in success, and still with that diplomacy that will protect the interest of medicine from the public who have not a true realization of the seriousness of practice by incompetence. The continuous criticism leveled at the prosecutor in the medical practice cases is the allegation that the medical fraternity does not within its own ranks protect the public from quackery. It is a source of great satisfaction that it can be justifiably stated that the present Board of Medical Examiners in this State is pointed to as a model for other states to follow from the standpoint of clearing up not only the unlicensed but the licensed quack. It can be stated as a fact that California did not possess more charlatans in the medical profession than any other state and still there has been a discontinuance of business of practically the entire venereal advertising specialists in whose ranks may be found the best exemplars of crookedness in the practice of medicine.

The number of convictions obtained by the Legal department of the present Board of Medical Examiners and the list of closed museums of anatomy is sufficient proof of the necessity of a Legal department that will attack crookedness not only of the unlicensed but of those who have been favored and privileged by the State. The following list includes the most conspicuous and better known violators of the Medical Practice Act, who have been forced to cease their pernicious activities.

California Licentiates connected with Medical Institutions convicted of misuse of United States Mail, 1915-1916: Homer C. Edwards, H. Gray Martin, I. C. Gobar, R. J. O'Connell, C. M. Scott, E. J. Rice, G. M. Freeman, Sr., Donald Harris, G. M. Freeman, Jr., Chas. K. Holsman.

Cases pending against California Licentiates for misuse of United States mail: Henry Giles, Ambrose C. Sims, Conrad Czarra, C. N. Hopkins.

Convictions against Non Licentiates connected with Medical Institutions in California, for misuse of United States mail, 1915-1916: Leo. K. Chinn, J. V. Ryle, C. A. Baxter, J. T. Burns, Arthur Penn, Paul Oesting.

Certificates recently revoked for unprofessional conduct: S. R. Chamley, A. L. Hunt, Calvin C. Case, R. S. Lanterman.

Certificates recently suspended for unprofessional conduct: Silas Austin, John C. Suckow, S. G. Edwards, Ray Millsap, J. K. Moradian.

GERMAN SALVARSAN AND THE AMERICAN PRODUCT ARSENOBENZOL.

Some months ago when the German salvarsan could not be had, the Department of Dermatological Research of Philadelphia (Dr. J. F. Schamberg, Director), produced arsenobenzol, a product chemically and therapeutically similar to salvarsan. This was done with the permission of the German agents and when salvarsan again became available arsenobenzol had to be withdrawn from the market. The salvarsan produced during the past few months seems to cause unusually severe reactions, according to published reports in various centers, and there are indications that the supply may again fail. Should it be possible again to have arsenobenzol it will be most welcome, for reports from authorities all over the United States based on thousands of observations, were unanimous in their praise of arsenobenzol, which proved to be just as safe and just as efficient as salvarsan.

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Original Articles

STUDENTS' HEALTH INSURANCE AT THE UNIVERSITY OF CALIFORNIA.

ROBERT T. LEGGE, M. D., University of California, Berkeley, California.

Throughout the broad expanse of our country, whether it be in educational activities or industrial life, a wave of social improvement has set in, whereby a demand for health conservation has been recognized. The evolution has been very rapid; so rapid indeed that in the past decade we note medical inspection of schools, health supervision of employees, workingmen's compensation acts, etc., culminating in a legislative demand for a universal system for health insurance. It is one of the most significant problems that confronts American civilization today. The academician, the sociologist, the labor organizations, the medical profession, and necessarily the politicians, are now laboriously endeavoring to develop a system that will be satisfactory, and practical for society. The egotist may shut his eyes and delude himself with the notion that health insurance is a dream. He has only to open them to behold the handwriting on the wall which will inform him of its realization in the very near future.

Health insurance when instituted in a community provides each individual with the best professional care in the event of illness and furnishes a definite stipend for the support of dependents during the period of disability. Its effect will be to greatly improve the medical profession as a whole, as better doctors will be demanded, trained not only in curative medicine, but in the broader field of preventive medicine.

As in the case of the workingmen's compensation act, the medical profession will not necessarily suffer, for the class that this insurance act serves, at the present time, is the class that receives a wage of less than $1,200.00 per year,—a class that can pay only the minimum medical fees, so that it greatly benefits both workingman and physician by insuring for the workingman the best medical care, and for the physician a proper and assured remuneration for his service. The service will create a greater demand for professional advice, and consequent enlargement of the field of work of the physician. Its development will deal a fatal blow to the illegal practitioner and those cults which will be unable to receive recognition.

The health insurance system as it is practiced at the University of California represents a constructive effort, and suggests a plan that with some modification and a co-operative effort may be applicable to the community. The system is being very successfully and satisfactorily operated in many mining, lumbering, or other industrial towns where it is compulsory, and can be controlled by qualified medical men, engaged by the industry. The army and navy perform a like service with selected men.

The economic problem to be solved for this larger field contains many smaller problems which must be disposed of along with its ultimate development, such as the question of its execution without jeopardizing the livelihood of a number of the medical profession. In other words, that all may be able to participate in administering to the demands of the people and in receiving the proper compensation for that service.

If qualified scientific medical men were commissioned and salaried to minister to the demands of the people, as administered for example by the U. S. Public Health Service, or if the system adopted by industrial towns should be adopted in full for the whole public service, the problem would solve itself quite simply and satisfactorily. The difficulty of allaying the fears of the medical profession is not the least of the evils to be overcome. They will raise all sorts of objections, such as the difficulty of the younger members acquiring practice, the cutting down of certain privileged remunerative fees, etc., but they will have to adjust themselves to the new order of things, and will find when it is accomplished how good it is.

California has an authorized commission to investigate the subject of health insurance. It is before the American Medical Association, and other state legislatures, employers and labor organizations. The medical profession in this country must co-operate, and be prepared to incorporate in the proposed law features that will be of vital interest to them, and must then work in harmony to support the measure. If they do not do so it will be to their regret, as proved in the case of the English profession after the passage of the Lloyd George act. Personally, I believe in health insurance, and am satisfied that though at first some difficulties will naturally arise, they will in due time be adjusted and modified to the development of a model federal act.

Some ten years ago, my predecessor, the late Dr. George F. Reinhadt, while a member of the faculty of the University of California, conceived the idea that it was necessary to improve the health and efficiency of the student body. His experience in the department of physical education proved to him that preventive medicine was the only rational means of accomplishing the end result. The "stitch in time" method necessitated a place where it could be applied; where students could visit and be scientifically treated before a more serious condition developed. As a result of this need, the infirmary was instituted upon the campus. This was approved by the President as well as the student body. True, the beginning was small, but by devotion and careful observation, the system was gradually perfected so that it now represents the best type of University health insurance in this country.

It is needless to remark that the idea was opposed by a number of members of the medical profession living in the community. They considered that it was unethical—that it was contract prac-

tice; and I have been told that the founder was about to face charges of unprofessional conduct. Some of the ultra-conservative members in the faculty, it has been stated, criticized the measure as well, with the idea that it was not academic. They could not appreciate the educational value of socialized medicine in improving the efficiency of the student body. The carrying out of these preventive measures has developed conscientious medical care for less money and has resulted in better attendance, fewer infections, and altogether a healthier group of men and women than can be found anywhere. And now all the members of the teaching staff will welcome the day when the system may be enlarged and extended to include themselves as participants in its privileges and benefits.

What changes of attitude take place with the development of social ideas, especially when the people become intelligently aware of measures that meet their needs!

The health insurance plan at the University is financed by a compulsory fee of $3.00 a semester which each student pays at the semi-annual registration period. The board of regents supplied the present building which is a remodelled residence. Annexes and other additions to the building, with equipment, furnishing and supplies, have been purchased from time to time with surplus receipts and donations.

As the attendance increases yearly, with a consequent increase of funds the staff automatically increases in number. The staff is composed mostly of half time men and women who possess ability in special work in medicine and are actuated by the common desire to give their best services to the student body. Several members of the staff are associated with the department of hygiene, combining qualifications which make them unique as teachers of preventive medicine. It is the primary purpose of the staff, through educational means to teach the students how to live and thereby eliminate disease by every available measure.

To accomplish this end, such means have been carried out as compulsory vaccination, control of communicable diseases, incorporation of sanitary measures about the campus to lessen the liability of infection, co-operation with the physical education and military departments, and the compulsory courses in personal and community hygiene which all first year men and women receive. All entrants are required to pass a thorough physical examination which includes the services of a dentist and oculist at the time, besides immunization from smallpox. Only students who are found to have an actively infectious or mental disease are rejected (about 1/5 of 1%). Other physical defects are discovered, treated and corrected by curative measures. The sub-standard or physically inefficient student is advised to carry less work and is constantly under the observation of the proper authorities.

Better to grasp the idea of this system, a concise description of the infirmary is necessary. There is a dispensary department where a daily clinic is held by the members of the staff at stated hours for the men and women. It comprises a commodious waiting room, administrative office, four private doctors' offices, four treatment rooms, X-ray and clinical laboratories, pharmacy, surgery, oculist's and dentist's offices.

For the house-patients the infirmary has forty beds which are in private rooms and wards. The private rooms are sixteen in number and there are two large wards with a capacity of eight beds each. Some private rooms are furnished with two and three beds. Students are all cared for in exactly the same manner, there being no special privileges, no distinction as to race, color or social or commercial standing. If a student requires segregation, it is accomplished at the discretion of the physician. This constitutes a lesson in Democracy which is unique, and is a living demonstration of what mutual understanding and sympathy, which possesses no suggestion of charity, can accomplish in other institutions,—a lesson, for example, for advocates of community sanitariums for tubercular patients, etc. In 1915, the number of bed-patients was 672. 121 of these students were sick in bed as house patients more than once during the year, the average stay being 4.9 days, and the average number of patients per day was 11.8. The largest number of patients at one time was 24.

The number of students who received advice, treatments, etc., during the year 1915-16 was 4,516 or 71% of the combined enrollment of 6,286. To the uninformed it might appear that this large percentage of cases would indicate unusual morbidity, but as a matter of fact the purpose is to encourage early advice for incipient conditions, thereby avoiding graver complications and developments,—the practical application of the "stitch in time." The average number of daily dispensary cases were 126.3, with an average number of treatments per individual patient of 7.8.

The equipment provides the various features that are necessary for a first-class hospital, such as an X-ray laboratory, operating and sterilizing room, and splendid cuisine where the best foods are supplied and prepared, open air desks for the treatment of anaemic and pulmonary cases, a solarium for convalescents, waiting-rooms, and numerous baths and showers.

The estimate of costs for operating the infirmary was based on dividing the gross costs, which include salaries, the maintenance of dispensary and house service, by the number of beds (40), which gives an estimated cost of $2.57 per bed per day.

At the present time a minimum fee is charged for surgical services, which will be gradually lessened and finally abolished altogether. As the State does not provide in its budget funds for the infirmary, it was with these fees and donations that new additions and equipment were purchased.

The number of anaesthetics administered in 1915-16 were 109. There were 262 surgical patients of various kinds, upon whom were performed, including major and minor cases, 151 operations. X-ray examinations totaled for the

year 147 plates, and over 1,625 laboratory reports were made, which included blood counts, cultures, analysis of secretions, etc.

As all students who matriculate are compelled to have a thorough physical examination, it enables us to inform them correctly as to their abilities for physical exercises, classroom-work, college sports, etc. Numerous defects, focal infections, and occasionally graver conditions which might also jeopardize the health of others, and be a menace to the community are detected and treated. Often students are relieved of imaginary diseases. In 1915 we found that 64% of the freshmen had errors of refraction, and our oculist wrote 700 prescriptions for proper glasses. The dental examination revealed that only 82 men and 56 women out of the whole 1513 entrant enrollment had normal teeth. Numerous other illustrations could be cited, such as postural defects, diseased tonsils, chest-diseases, flat feet, etc., etc. Enough has been said for the argument for compulsory medical examinations.

These entrants must have a satisfactory scar to show that they are properly immunized against smallpox, or submit to vaccination. This is a State law. Since 1901, when this law was established, there have been no cases of smallpox among the students. In 1915-16 there were 473 cowpox vaccinations. Typhoid inoculation is not a compulsory measure. However, 273 students voluntarily received the protection against typhoid infection.

Certainly safeguarding the health of the students has been achieved through all these agents. The University provides, through its department of hygiene, compulsory lecture courses in which the truths of preventive medicine, personal and community hygiene are taught, and the superstitions, vagaries of medicine, quackery, and other frauds are shattered and disclosed. All will concede this course to be of inestimable educational value.

A word as to the management of curative medicine as it is practiced at the infirmary: Here is a representative staff of medical men and women who have all a special training in their profession. Men and women who work in harmony, who are in sympathy with this health insurance movement, and who can contribute organized and economical medical service. By careful study of cases, consultation, and assistance from the various laboratory workers, a remarkable number of correct diagnoses are made. The same system that is practiced so successfully at the Massachusetts General Hospital under the direction of Dr. Cabot, and which is also being successfully carried out at St. Luke's Hospital in San Francisco. This is better known as group-medicine. The laity as well as the profession realize that only the very rich and the very poor receive the best type of curative treatment. Why then should not socialized medicine, which can be so successfully applied to college students and industrial plants, be applicable to the whole of society?

THE SAN DIEGO DIAGNOSTIC GROUP CLINIC.

(A Preliminary Report.)

ROBERT POLLOCK, M. D., San Diego, Cal.

This clinic, which was opened to the public on Saturday, February 17th, is the initial expression of an earnest desire on the part of a San Diego philanthropist to help the man of modest income ($100.00 a month or less). Mr. E. W. Scripps, the owner of valuable newspaper properties in San Diego and many other American cities, proposes to have this class furnished with careful group diagnosis at a price within the means of the working man, Mr. Scripps paying all necessary deficits. To do this he has furnished and equipped a substantial building in an easily accessible residence neighborhood and placed it, through a board of five trustees, at the dispqsal of the local medical profession to plan and work out the details of a diagnostic clinic. Its staff, consisting of fifty members representing all of the recognized specialties, has been selected from the ranks of the County Medical Society. Its members serve in groups for a month at a time.

Patients are accepted for diagnosis only and must be referred by a registered physician. They are kept in the clinic for two or three days, or as long as is necessary to complete a diagnosis, when they are referred back to their physician, to whom is sent a composite of the diagnostic findings, and an outline of treatment suggested. Each physician after examining a patient commits his findings and conclusions to writing and these reports are discussed daily by the entire group on service. In this way an earnest endeavor is made to bring to light and correlate the underlying pathology of obscure problems in diagnosis represented in the patients that travel about from one doctor to another without receiving what they most desire. No member of the diagnostic staff is allowed to accept for treatment patients who have been examined by him within ninety days unless so requested by the patient's physician.

In the two weeks that the clinic has been open, twelve cases have been worked out, every one an interesting symptom complex, and the diagnostic group first assuming service is finding the work intensely interesting.

SYMPTOMATOLOGY OF HYPERTHYROIDISM.*

By HENRY H. LISSNER, M. D., Los Angeles, Cal.

It shall not be the purpose of this paper to take up the symptomatology of exophthalmic goitre but to consider the symptomatology of hyperthyroidism, and only speak of goitre and exophthalmus as concomitant symptoms of thyroid intoxication, since in recent years we have come to learn that not every case of so-called exophthalmic goitre showed the goitre and not infrequently the exophthalmus was

* Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 19th, 1916.

absent, indeed it is to be regretted that the disease has often gone unrecognized because of the lack of this symptom, or the lack of a visible protrusion of the thyroid gland.

[1] The overactive thyroid has been studied for the past 125 years by Morgagni, Parry and Elagini, then by Graves in 1835, Basedow in 1858; later Hirsch and Moebius, and more recently by Kocher, Klose, Plummer, the Mayos, Crile, etc. The symptomatology varied between the heart, the nervous system and intestinal toxins, until at the present writing we have the two main theories as expounded by Crile and Plummer, whom Frazier [2] quotes as follows: "Crile's idea is that Graves' disease is not a disease of a single organ or the result of some fleeting cause, but is a disease of the motor mechanism of man, the same mechanism that causes physical action and that expresses the emotions; its origin is in phylogeny, and its excitation is through some stimulatory emotion, intensely or repeatedly given, or some lowering of the threshold of the nerve receptions, thus establishing a pathologic interaction between the brain and the thyroid."

Plummer regards it as a form of thyrotoxicosis in which the toxin, whatever may be its nature, acts directly on the more vital organs, more notably the central nervous and vascular systems, and that the clinical picture is made more complex by the interaction of those organs whose functions have been directly disturbed by the toxins. Barker [3] is of the opinion that the disease is not simply due to an over activity of a hypertrophic normal gland but is the result of an actual perversion of secretion in a gland pathologically altered. Lohman [4] says that Roos and Oswald have shown that thyreoglobulin, which is formed in the cells, is physiologically inactive until it becomes iodized by the blood. The excess of thyroid secretion may be said to produce a general stimulation of the peripheral nerves, and an increase in metabolism causing the breaking down of tissue proteids, especially those of the muscle.

"Hyperthyroidism [5] is peculiarly a condition of the female during the period of greatest reproductive activity." The first evidence of the condition manifests itself at this time, and may continue even after the complete establishment of the menstrual flow. In fact many cases of so-called physiological hyperthyroidism at this period of life, go on to the true pathological state, or remain quiescent for years only to start again under favorable conditions, i. e., pregnancy, severe nerve shock, etc. At this stage the earliest symptom is the tachycardia, a pulse varying from 100 to 160. It is the opinion of some that a pulse of 100 is not sufficient to be classified as a tachycardia, but in given cases where such condition has been constant over a long period of time it is my opinion that it should be classified as such, and where no other pathological basis can be found to explain it a diagnosis of hyperthyroidism must be made even in the absence of exophthalmus and goitre. The heart is usually somewhat dilated, the pulse beats are rather soft, the carotids jumping, there is a general increase in the precordial impulse, and over the entire heart is heard a systolic blowing murmur or hum, which according to Sahli [6] is produced by the increased rapidity of the blood current. In the more advanced cases gallop rhythm and intensified heart beat are caused by stimulated cardiac action. Finally there develop pronounced myocardial degenerative changes with arrythmia. The blood pressure varies between 120 to 130. The blood shows nothing of diagnostic importance.

Next to the heart, the nervous system is most frequently affected. Here again the earliest indications are met with and not infrequently a tachycardia, occurring in an individual who is showing the nervous symptoms of hyperthyroidism, is put down as a "nervous heart" and the cause is again overlooked. Bearing out this idea several papers have recently appeared which bring out the vagotonic and sympatheticotonic phenomena of Graves' disease. Barker [3] quotes Eppinger and Hess, C. Von Noorden Jr., Barker and Sladen and others, and is of the opinion that most cases show mixed symptoms; especially those with marked nervous and mental disturbances. Tremor is the most frequently discussed nervous symptom, and while it is not always present in the earliest cases in children, according to Pfaundler & Schlossman [7] pseudochorea, as well as genuine chorea are often observed in the beginning but they disappear long before its termination. There are, however, certain other early symptoms of nervous or psychical origin which are most important and must be seriously considered since they are frequently put down as neuresthenic or even hysterical manifestations. Emotional instability, loss of memory, troublesome blushing, sweating, vertigo, melancholia, unusual happiness, in a word a lack of mental poise coupled with mental fatigue, characterizes some of the earlier nervous symptoms; in the later stages the patient's nervous condition may border on insanity. Insomnia though present is not constant except in advanced cases.

Goitre is absent in about 20% of the cases. It is of great interest to note how frequently the symptoms may be out of all proportion to the size of the struma. A very small and barely palpable tumor may cause the most profound symptoms, and vice versa. The goitre may light up suddenly, secondary to other infections, particularly about the mouth or throat according to Jameson [8] and bring on an acute attack with exacerbation of all the symtpoms. One sign of diagnostic importance is the presence of a bruit and thrill radiating down from the apex of the gland, all over the goitre. It must be distinguished from that of aortic disease. The symptoms will vary with the pathology of the gland, and I refer to the studies of Plummer and others of the Mayo clinic for more detailed illustration.

The eye symptoms of the goitre vary from none at all to pronounced exophthalmus. In the more advanced cases they are of course not difficult to

recognize. Von Graefe's, Moebius', Stellwag's and Dalrymple's signs may be elicited but are not constant. The most important is the exophthalmus, and various ideas are advanced as to its causation. Some of them are: that it is due to a weakness of the eye muscles; that a venous enlargement pushes the eyeball forward; that in marked cases there is an increase of retrobulbar fat, but none of these has been accepted above the others.

Loss of weight is in some instances present in the early course of the disease, and if taken with the symptom of tachycardia was usually considered to be more significant of tuberculosis. However, we are now more familiar with the varied types of excessive thyroid secretion and by careful observation soon place these cases in their proper class. This profound loss of weight is due to the loss of fat and albumen from the ever-present metabolic increase, as demonstrated by Magnes Levy [7] (by instituting exact determinations of the respiratory gas changes). At the same time the gastro-intestinal digestion is undisturbed unless there are attacks of serous diarrhoea. Not infrequently there is an increase of appetite, also increased flow of saliva, and in early cases the bowels may move more than once daily.

Farrant [9] has shown that thyroids obtained postmortem from cases of acute and chronic intestinal obstruction have revealed no signs of hyperplasia, and concludes that there is no evidence to show that products of intestinal putrefaction have any action on the thyroid.

There still remains for our consideration an enormous group of symptoms directly or indirectly referable to hyperthyroidism, but lack of time prevents more than a casual mention of them. Muscular weakness is one of the early symptoms; then there are the skin changes, i. e., pigmentation, decrease in galvanic resistance (Vigouroux and Charcot) and sensations of heat; leukoplakia, alopecia, amenorrhœa, dysmenorrhœa, polyuria, albumenuria, alimentary glycosuria, emaciation and cachexia, while occurring in cases of moderate severity and advanced cases they are not characteristic symptoms.

In conclusion it must be evident from the foregoing limited discussion that the usual so-called cardinal symptoms of hyperthyroidism, i. e., tachycardia, exophthalmus and goitre, are not constantly present. Any two of them may be absent, and it is only by constantly bearing in mind the frequency of the early and often insidious onset of the condition at puberty, and by careful observation of the sometimes transitory character of the leading symptoms that we will increase our diagnostic acumen.

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TREATMENT OF SYPHILIS.

By GRANVILLE MAC GOWAN, M. D., Los Angeles.

(Concluded from Page 75, March Journal.)

Mark: "At present, I am using for the treatment of syphilis, salvarsan intramuscularly in the lumbar region as an initial treatment. This salvarsan is prepared in the following manner: The salvarsan is poured into a small salt mouth bottle containing glass beads. Just sufficient warm sterile water, distilled, is poured into the bottle to dissolve the salvarsan. To this is added two or three drops of a 1% alcoholic solution of phenolphthalein as an indicator. Following this a freshly prepared sterile 4% solution of sodium hydrate is added, drop by drop, and the contents shaken until the preparation is a faint salmon pink. It will be found that this will make in amount about eight to ten c.c. This is injected in the lumbar region, in the muscles on each side in divided doses. This whole procedure is preceded by the injection, one-half hour previously, of one-fourth grain morphin and 1/150 of atropin. It is practically painless. This is usually done in the hospital, the patient leaving the following morning and returning to work. In about one week, we begin intramuscular injections of mercury salicylate, or inunctions of mercury. Inunctions are given daily for six days, followed by a Turkish bath on the seventh day without inunction. Intramuscular injections of salicylate are given where they do not cause too much pain and are not objected to by the patient. In six months to one year later we give other salvarsan mercurial courses with tonics. They are continued for about two and one-half years, at the end of which time a rest is taken for six months and a Wassermann is taken; if negative, six months more are allowed to elapse, then a second Wassermann is taken. If still negative, the patient is requested to take twice a year about six weeks of mixed treatment, purely as a precautionary measure."

Chassignac: "You know it should not be the disease, or the cause of the disease you treat, but the patient; hence there can never be a routine. The new drugs I consider not tried long enough to know of the permanence of their effect. Salvarsan I use to control the symptoms, but prefer to use the old and new forms in the treatment, in combination, so as to give the benefit of all we know to the patient. The mercury, I prefer to administer in the form of soluble salts by the needle, or by inunctions. The salvarsan, I prefer to give by intramuscular injections. Until we have accumulated sufficient proof that the salvarsan can do what mercury can do and in a shorter time, I intend to continue advocating the three years' treatment. I am guided by the Wassermann, but do not consider it infallible in its indications, nor

that it replaces clinical observations or judgment based on experience."

Gradwohl: "I believe in the combined salvarsan and mercury treatment. I give at least six doses of 0.4 grammes at intervals of ten days, followed by six intramuscular injections of salicylate at weekly intervals. That brings us up to the 110th day of the treatment, then a Wassermann is made. If negative, I give iron tonics for two weeks and then repeat the course, substituting twenty-four rubs for the injection of salicylate, of course avoiding salivation, which brings us to the 200th day of the treatment, when another Wassermann is made. If negative, another course of tonics for thirty days, and then a Wassermann. This is followed with twenty-four more rubs in a series of six, and tonics for twenty days. If the Wassermann continues negative four salvarsan injections at intervals of three weeks, then a rest for thirty days. This is the 476th day; then a series of inunctions, twenty-four in all, in groups of six. This treatment is pursued for three or four years with salicylate injections and inunctions of mercury and Wassermann reactions at periodic intervals. After three years, with a succession of repeated negative Wassermanns, and with spinal fluid test negative, after provocative Wassermann, I place the patient under observation for two years with treatment four months in the year."

O'Crowley: "In primary syphilis, as soon as the diagnosis is clinched, either by the microscope, or by a Wassermann, I give a full dose of neosalvarsan intravenously weekly, for four to six weeks and follow that weekly for a year with intramuscular injections of salicylate of mercury, the dose being graduated according to the susceptibility of the patient to mercurials, and according to his resistance. The injections are sometimes continued for eighteen months. After an interval of six weeks, following the last injection, a Wassermann is made, and if negative, another is taken every three months for one or two years. If they are all negative, an examination of the spinal fluid is made, if the patient will consent, and if this is negative I consider him cured. If, however, the Wassermann should show two plus or over, I advise four intravenous injections of neosalvarsan weekly, followed by intramuscular injections of mercury weekly for several months, then a rest for six weeks before a Wassermann, which should be negative. If my patient has never had generalized symptoms, I do not think it is necessary to use the iodides. With this method, I get good and bad results, and feel that the time has come to standardize the treatment of syphilis, for I do not feel justified in speaking too enthusiastically of my present ideas and system."

Lyon: "I believe salvarsan is a specific poison to the spirochete, the efficiency of which is in direct ratio to the age of the infection, but I have never employed it as the only remedy in the treatment of syphilis. I believe it is impossible to cure syphilis with this drug, unless the diagnosis be made before the lymphatics become involved. As soon as the diagnosis is made the patient is treated by combined mercury and salvarsan, receiving three or four injections of .4 salvarsan weekly, and following this course, ten or twelve injections of grey oil or salicylate, then a rest for a month during which time tonics are given. Then the treatment is repeated and the patient allowed two months' rest, during which tonics are given again. At the beginning of the second year, twelve injections of mercury without the salvarsan are given before a rest for three months with tonics and iodides, followed by another course of mercury injections, with a six months' rest and then a repetition of the injections. The results of this treatment in my hands have been altogether favorable. Syphilitic patients must continue, as in the past, to remain under observation for years. The Wassermann reactions during the treatment are variable and often contradictory to the symptoms. In so-called tertiary cases, I have often seen active lesions with a negative Wassermann found positive, a few months later without any treatment. The Wassermann is absolutely no criterion as to the extent of the cure of a still active disease."

Charlton (of Indianapolis): "In acute cases, one full dose of salvarsan intravenously and then twelve to fifteen intramuscular injections of calomel or grey oil at weekly intervals, followed by another full dose of salvarsan. This standard is purely arbitrary, arrived at by observation. Since using it, I have not had a single recurrence, either clinically or by the Wassermann. Where the syphilis has become generalized this is not sufficient in quite a percentage of the cases. Cases of tabes, paresis and old profound visceral syphilis I would not include as suitable for the above routine. But, I believe that the above short course will absolutely and permanently cure the majority of early cases.

McDonagh: "Every one has agreed that if syphilis is to be cured, diagnosis of the initial lesion at the earliest possible moment is essential. I feel very strongly that the best diagnosis is a clinical and not a Wassermann one. Excision of the primary sore to be practiced when possible. If this cannot be done, it should be cauterized. Following this, at intervals of four days, I give seven injections of neosalvarsan, commencing with .04 and ending with .75. A week after the seventh injection, an intramuscular injection of grey oil followed by seven others. This is to be followed by eight intramuscular injections of grey oil, at intervals of a week, then iodides for three weeks, followed by a rest of five weeks, and then a repetition of the course. Mercury and the iodides and the rest twice repeated. If the disease has become generalized, if possible an examination of the cerebro-spinal fluid. If the fluid is normal, seven injections of neosalvarsan at intervals of from four to seven days. If the fluid is pathological, nine to eleven injections, and if still positive after this, as many intradural injections of salvarsanized serum as is necessary to render the fluid normal, then six courses of the mercury and iodide treatment spread out over two years. The injections of neosalvarsan commence with 0.45 and end with 0.90. Latent stage—when I placed reliance upon the Wassermann reaction, treating those who gave

a positive reaction, and leaving those who gave a negative reaction, the course was not clear; but now, I no longer attach the importance to this reaction which I once did, and I have to alter my routine. I now examine the cerebro-spinal fluid and if this is normal, however positive the blood may be, I do not advise any treatment. If the cerebro-spinal fluid is positive, whether the blood is positive or negative, I give as many injections of salvarsanized serum as is necessary to render the fluid normal again, and supplement by one or two years' treatment of mercury."

It has always seemed to me, from the beginning of my knowledge of syphilis, that its progress could be stayed if vigorous treatment could be commenced before the advent of generalized symptoms. I got this opinion from Auspitz, a brilliant clinician, who, derided by his fellows at the Vienna Clinic, went on excising chancres coming to observation early, and pushing mercury afterwards without waiting for secondary symptoms, because he knew he had by these means, in a few instances, prevented the fastening of this plague for life upon the victim. For more than twenty years I stood almost alone among the teachers of America in advocating the effort to eradicate syphilis, before the advent of general symptoms. To-day, many are with me. The discovery of the fact that the spirochete pallida and its spores are the cause, that they can be detected in the initial sore soon after its advent, and that intravenous injections of salvarsan or neosalvarsan, given early and often, will destroy them in situ and cure the disease, is the cause of the change. Now everybody believes that the patient should be cleared up, before he can infect others.

The time to realize the dream of a positive cure of syphilis is to accomplish it before the disease has become generalized. The average initial lesion is so well marked that a trained clinician cannot go astray in the diagnosis. The spirochete can be found in the vast majority of cases just before, or at the commencement of the induration of the neighboring lymphatic glands. Given a sore that answers the description of a Hunterian chancre, anywhere upon the body surface, with or without the ability to find the spirochete therein, it should be destroyed by excision with the electric cautery, and if no time should be lost in the administration of five to seven injections of salvarsan, or neosalvarsan, in increasing doses, at intervals of four days to a week, a permanent and positive cure will be effected. Enough should be given to overwhelm the parasite but not destroy the patient. There are but two definite contraindications for this treatment. One is renal insufficiency, and the other is acute infections of the respiratory tract. One must not wait for generalization, which certainly is accomplished very frequently while the Wassermann is still negative. After generalization has taken place, when mucous patches are present in the mouth, and the various erythematous, papular, squamous or papulo-pustular lesions have occurred upon the skin, then to me the best method, holding forth the greatest hope of permanent success, lies in the combined treatment of mercury and the arsenical preparations, of which salvarsan is the type. To be effective, however, the arsenical preparations must be used intravenously and used at short intervals; because, if the total dose is a small one, or the interval between the doses is too great, the spirochete and their spores will not all be killed, and those that remain will develop an immunity to the drug. It is futile to give a single dose at any time, in generalized syphilis. We have no way of telling whether the patient will be tolerant to the arsenical preparation primarily, so it is best to commence with a moderate quantity, say 0.4, and gradually raise to the limit on the fourth injection, because in the presence of an energetic action upon the spirochetes, toxins are liberated into the blood which cause unforseen symptoms, and these are most likely to occur on the third day following the second dose. Their dangerous form is that of hemorrhagic encephalitis, which is a symptom of syphilis, and sometimes causes death where no arsenical preparations have been used. But, deaths have occurred sufficiently often, and serious symptoms still more often, on the third day after the second dose of salvarsan or neosalvarsan in syphilitic cases in the stage of early generalization, to make one very cautious at this time. I now give from six to eight injections within five weeks, the number being determined by the effects upon the patient and his general well being. Between these injections the major number of syphilologists to-day give intramuscular injections of insoluble preparations of mercury. I do not think this is necessary, but after the last salvarsan injection, commencing on the second day, I think it is best to give injections of mercury at intervals of from five to seven days for thirty injections, unless adverse symptoms like stomatitis, or interference with nutrition, or painful nodes at the site of injection follow, or seem to follow them; then a rest is given for six weeks and a Wassermann taken. The object of this Wassermann is really more to satisfy the patient that everything is being done for him that can be done, for arbitrarily the mercurial course is then repeated and a rest given for two months, when another Wassermann of the blood is taken, and if this is negative, an interval of three months is allowed without treatment, and if at the end of this time the Wassermann remains negative, an interval of four months is entered upon, when, if the Wassermann of the blood still remains negative, a Wassermann of the spinal fluid is taken, and if both are negative the individual is believed to be cured but must report at intervals of every three months for a Wassermann and a clinical inspection for another year. If there is any difficulty about taking intramuscular injections of mercury by reason of pain or fear, disagreeable nodes, or possible abscesses, then I substitute inunctions, using a preparation called "Hageen," which is cleaner, more convenient and just as effective as mercurial ointment. This is given in courses of six rubs and a day's rest, one month out of every two, for a year.

Now, if at the end of six or eight or ten months, or a year, after the cessation of treatment, the Wassermann of the blood, which has

been negative, appears positive, what shall one do? Enter upon the unceasing and unending course of treatment anew? In the absence of any clinical symptoms, excepting that of the Wassermann, I think not. My experience is, that such a treatment as I have prescribed, carried out in the early period of the general manifestations, would, in all probability prove successful, and that a Wassermann once negative will remain so. But, if in the interval the individual desires to marry, or desires to enter into some relation where it is possible to transmit his disease to others, and requires a positive answer, I advise a provocative injection of salvarsan or neosalvarsan, and then, if his blood Wassermann is found negative, and his spinal fluid answering negative to the phases of Nonne, I should regard him as cured. Clinically, he might be considered cured, even if the blood did show a mildly positive Wassermann, for the reaction does not, in the opinion of many people who are competent to judge, show that one has an active syphilis. It is comparable to the tuberculin reaction which only shows the presence at some time in life, of the disease in the body.

It is in late lesions where the treponema have settled down for life, infiltrating vital organs, with or without definite destruction, as in aortitis, cirrhosis of the liver, myocarditis, pulmonary affections, etc., when unaccompanied by recognizable lesions of present or past affections of the skin, mucous membranes or bones, that the Wassermann reaction is really of most use to the clinician. It helps him clinch the guess he may have made and heads him toward the proper treatment. It does not aid him in telling when they are cured, for in these cases, as in gummatous destruction of bone, muscles, and skin, a clinical cure is the rule following aggressive combined attacks with mercury, arsenical injections, and iodides, but a continuous serological cure almost never occurs, and repeated Wassermanns only serve to disturb the patient, and create in his mind doubt and despair. It is here that the man has to be saved without any definite real hope of destroying the disease. The spirochaetes are too well entrenched to be routed, but they may be disturbed, and the pathological changes they have caused, repaired. In such cases, outside of the domain of syphilis of the nervous system, the opinion I have formed from my reading, and my personal experience, is that a succession of assaults with iodin to break down the citadel, of salvarsan to reach liberated or exposed spirochaetes, and disable or destroy them, followed by mercury to clean up the field, so to speak, will give the best results.

The intervals and manner of conducting this campaign must be individual and necessarily vary with the general health of the particular person to whom it is applied. Tonics, fresh air, good company, the avoidance of too much laboratory testing and an optimistic opinion of the physician also help some in achieving a clinical cure.

The only way a hereditary syphilis can be cured perfectly, is to cure the mother while she is carrying the child, and this can be done with salvarsan and mercury. The majority of these children, born with patent signs of the disease, die early, and thus escape a miserable existence. Up to four years, I think with few exceptions, every one uses the ancient treatment of the abdominal mercurial bandage, or the grey powder internally, and baths of bichloride of mercury. After four years, salvarsan may be administered in proportionate doses, by intravenous injections with the happiest results in producing clinical cures, using the jugular veins. Some have advocated, and put into practice, the use of the superior longitudinal sinus before the closure of the fontanelles. The congenital syphilis of grown people must be treated exactly the same as a late syphilis earned by the victim himself.

Syphilis of the central nervous system: Of late some pathologists have imagined that different strains of spirochaetes cause different manifestations; one strain for symptomatic lesions and one for nervous lesions, etc. There is no proof anywhere of any kind that this is the case. Much attention has been given to nerve syphilis during the past five years, and sufficient experimental work has been done by a few extremely competent, and a mass of rank incompetent, observers, so that we are now in a position to give the approximate worth of the prevailing methods of treatment. Attention should always be given to early meningeal lesions, for, although the majority of these clear up under a non-intensive treatment, as they are exudative, occasionally damage is done which is irreparable, and this can very well be prevented by a few immediate intramuscular injections of mercury, followed by ascending doses of salvarsan, in number, five to eight. In intracranial affections, other than early meningeal lesions, the fashion of the day is to deny the usefulness of any treatment possessing the power to arrest the disease without injecting the remedy directly into the subarachnoid space in the cord, or introducing it into the lateral ventricles where it may circulate with the cerebrospinal lymph with the hope of its reaching, through the foramen of Magendie and the foramina of Luschka, the ventricular cavities, the central canal of the spinal cord, and the perivascular connecting lymph spaces to all of the nerve cells. This theory, for it is a theory, is based upon incomplete experiments which seem to show that the cells of the choroidal plexus are composed of a colloid that will not permit the passage of arsenic or mercury from the blood stream into these lymph spaces though allowing them to pass out. As against this assumption, Homer Swift, who originated the method, says that the cerebrospinal fluid sometimes contains arsenic after intravenous injections of salvarsan. Second, Block and Chaplin state that after three or four intravenous injections of old or neosalvarsan, at short intervals, arsenic can easily be detected in the cerebrospinal fluid. Barbat states that after giving an intravenous injection of salvarsan, it will appear promptly in the spinal fluid if the pressure in the canal is reduced by tapping. The experiments of Benedict, who is not a physician, but a skilled

biological chemist, showed that the maximum amount of salvarsan in 20 c.c.'s of whole blood, forty-five minutes after an intravenous injection of salvarsan, equals .0001. Bond, repeating the experiments in four specimens of spinal fluid taken twenty-four hours after intravenous injections of salvarsan, showed free arsenic up to one-sixth to one-tenth of the concentration in the whole blood. It is not reasonable to suppose that any part of the body can permanently escape receiving any substance which is carried for a considerable time in the blood stream. The resistance in the colloidal filter will be broken down and let it through; so that, in the vast majority of cases of nerve syphilis, there is no necessity for taking the risk of intraspinal injections. It is a matter of common experience that they are painful, that the reactions are often severe, that bladder paralysis may occur, and that this may be permanent, and too frequently, they fail in any way to pay for their trouble and expense. The weight of opinion of neuro-syphilographers at the last meeting of the A. M. A. was strongly against their use. This method should not be used at all in late hemiplegia, degenerative encephalitis, myelitis or paresis. It should be saved entirely for those cases which will not respond to the arsenic compounds of the benzol ring given intravenously, and to mercury. No one is better qualified to speak than Fordyce, who states "the majority of people with abnormal spinal fluid can be influenced by intravenous treatment, but slow." Nonne condemns them without qualification. These remarks apply in a lesser degree to the use of mercurialized serums. It is well to remember that lumbar puncture is not always an innocuous procedure.

Of it Nonne says: "Syphilitics rarely have trouble, but those who are not syphilitic frequently suffer for days and even weeks from headaches, giddiness and nausea. I saw one man who was prevented from attending to his business for nearly six months by these symptoms. Puncture in the consulting-room should be absolutely condemned. The physician may be held legally liable for disagreeable results." Nonne himself has had to pay.

Do not treat early syphilis symptomatically, or syphilis at any stage by prescriptions from a book. It is a spirochetal septicaemia and requires vigorous and prolonged measures to effect a cure.

Drugs: In the treatment, salvarsan, neosalvarsan and kindred arsenical compounds, mercury, preparations containing iodine, and sodium nucleinate, together with excitants of appetite and digestion, need to be considered. Old salvarsan and neosalvarsan require very careful handling. The solution for injection, either intramuscular or intravenous, must always be freshly prepared. Their chemical composition is easily disturbed. The glassware should by preference be Jena glass, the rubber tubes pure rubber, and both should be boiled in distilled water just before they are used in vessels which have been previously rinsed with distilled water. The water for the preparation of the solutions should be freshly distilled; the filter paper should be sterile, and the sodium hydrate solution should be chemically pure. The saline for dilution should be made with sterile chloride of sodium. The arm of the individual should be thoroughly cleansed with soap and water and alcohol, or with tincture of iodine. The salvarsan solutions can be used in much greater concentrations than that advised by the makers, but never, on account of the considerable amount of alkali, approach in concentration the solutions of neosalvarsan. I have now for about two years been dissolving my neosalvarsan powders in from ten to twenty c.c.'s of distilled water, and using an ordinary all-glass syringe to give it with, and have never noticed any ill effects from it. Intramuscular injections I do not give, and I would not advise others to give them, although most excellent physicians, like Marks and Swinbourne and Chassaignac, prefer to use them. Salvarsan solutions should always be filtered before using. For this purpose, some use several layers of plain sterile gauze, but a hardened filter paper is preferable. My experience has satisfied me, that to get the effects desired, the injections must be repeated at very short intervals, and this can be done only intravenously. Neosalvarsan is not quite so powerful as salvarsan, nor is it retained so long and it can be given more frequently. Some of the most expert syphilologists, like Fordyce, prefer to give small doses of this drug every two or three days in preference to any other treatment for syphilitic affections. Sometimes great difficulty is experienced in the late lesions of syphilis in giving salvarsan, when the veins appear prominent, because of a round celled infiltration of the intima, or a radiating phlebitis, the fluid will not flow when the needle is in the vein. I have never yet been able to convince myself that injections of old salvarsan, given at the office without rest, or restraint, of the patient, is altogether safe. I believe that it is best that the patient be in bed for from twelve to twenty-four hours after an intravenous injection of either of these drugs, but to-day many practitioners of standing administer neosalvarsan as a routine in their offices. Intradural injections of salvarsanized serum is an ingenious and fascinating proposition. If given at all, it should be according to the method put forward by Swift and Ellis. Others have sought to improve upon this method, but to the disinterested observer their improvements seem to be without merit. The injections of salvarsan or neosalvarsan solutions directly into the spinal lymph space, or into the lateral ventricles, appears to me to be an insane procedure, the results of which give no possible excuse for their use. If intradural injections are undertaken at all, the administrator must be prepared for trouble, and his patient must also be psychically prepared for the pain and aggravation of symptoms which so frequently follow. A review of the literature leaves me with very grave doubts as to whether intraspinal injections ever are curative. The natural history of the diseases they seem to help, and for which they are administered, shows intervals of apparent freedom from advancing symptomatic troubles, and we have no way of telling whether the good results which have appeared in

a few cases from this method of using salvarsan or neosalvarsan, might not have been due to natural periods of rest in the disease.

A preparation called arsenobenzol, recently introduced into the American market by the Philadelphia Polyclinic, is very highly spoken of, and possesses at present the merit of being relatively cheaper, and that supplies can be obtained. It appears not to have distinct ill effects, and it does cause the symptomatic disappearance of the lesions of syphilis. That its ultimate worth may prove to be, time alone may tell. No doubt other chemical compounds along the lines of these salvarsan preparations will be discovered by chemists outside of Germany, perhaps more satisfactory than the present ones. The war has compelled English and American chemists to take up this line of research, and in order to test the value of their preparations, we must not have a previous judgment, and must be satisfied to experiment with them, just as was done with the original preparations.

Mercury: For hundreds of years, mercury has been rubbed into the skin for syphilis, or swallowed in the form of pills or solutions. Since 1878, when Lewin of Berlin introduced intramuscular and intravenous injections of bichloride of mercury, the attention of the profession has been directed to this method of the administration of the metal. The bichloride, the cyanide and the succinimid are the soluble salts in use to-day. Of the cyanide .5 to 1.5 of a one to one hundred solution may be injected every other day, intravenously, without harm and frequently with much benefit. Of the bichloride, from .0075 can be used twice a week, dissolved in from ten to twenty c.c.'s of freshly distilled water, for from six to eight weeks, intravenously. For intramuscular injections, the insoluble preparations of mercury are almost exclusively used. Calomel is not very popular. There are some practitioners who have learned to use it without danger, but more abscesses have followed its use, and more pain has been caused by it, and salivation more frequently follows, than with any other preparation. I should class it as more potent than either grey oil or salicylate, but also more dangerous, and therefore prefer to leave it out of my practice. Of the preparations of grey oil I prefer the Burroughs & Welcome cream, or Emoseter, an Italian preparation. In spite of the adverse opinion of Nelson and Anderson, I believe the 10% suspension of mercury salicylate is a potent and effective remedy for syphilis used intramuscularly, the ampules of Hynson and Westcott are convenient. The market is full of proprietary preparations, each maker claiming virtues for his particular formula which it may, or may not, possess. Of soluble preparations, enesol is very useful. The patient comes under the influence of the mercury with it very rapidly. Another is the mercurialized serum put up by Mulford. With a very great number of practitioners, nothing has ever taken the place of mercurial inunctions. While admitting their great value, I never use them unless the patient either cannot take the intramuscular injections on account of pain, or on account of inability to appear at regular intervals in the consulting room. A course of inunctions should be thirty.

Where the eruption is scaly or papular upon the palms, and the patient cannot take salvarsan, I know of no method by which such a speedy recovery can be brought about, as by local fumigation. The healing of the chancre is also facilitated by the applications of mercurials to it. It should be cocainized and then cauterized with acid nitrate of mercury, and afterwards dressed with a weak solution, one to one thousand, of bichloride of mercury. When one cannot use the arsenical preparations and has to depend upon mercury, a calomel or ammoniated mercury ointment will very greatly help the cure of its manifestations upon the skin. So also, will baths of bichloride, one to two grams to an ordinary hot bath of 100 liters.

There are conditions under which it is necessary to take mercury internally. It is the least efficacious of all the methods of its administration, and yet it is the one most used. It must be that many cases of syphilis have been cured, clinically at least, in this way. Salivation and gastric disturbances are frequently caused by it. When used, it is best to follow the advice of Fournier and Keyes. I have found tablets of grey powder, tannate of mercury, and the Garnier pill the best preparations for continuous use, but treatment should be omitted several times a year, for a period of six to eight weeks, so as to avoid the chances of mercurialism. Tertiary manifestations, of an infiltrative or ulcerative type, including gummata on the bone may frequently be made to disappear very rapidly by the local use of a compound plaster of mercury and belladonna. Iodin preparations are invaluable in the later stages, when there is much round celled infiltration. Iodin softens up these deposits and prepares their way for absorption and fixes it so that the mercury or arsenic can come into contact with the spirochaete. There have been no more efficient preparations introduced of recent years than those which we are familiar with: the iodides of potassium and sodium, and sagodin. Nucleinate of soda is highly recommended by Fischer of Prague, and Lane and McDonagh of London, in degenerative encephalitis and syphilitic dementia. It is employed in intramuscular injections of from ten to fifty c.c.'s of from a two to a ten per cent. solution weekly, in courses of from six to twelve injections.

Sulphur springs and radium waters: There is considerable evidence as to their usefulness. They give the patients change of surroundings while they attend to their business of getting well. I have been asked to tell when a syphilitic may safely marry.

Caveat Emptor: There is no clinical or pathological means by which we can be certain that one who has had syphilis can be married without risk, unless the disease has been treated continuously before the secondary symptoms have commenced.

ABSTRACT OF THE MINUTES OF THE NINETIETH MEETING OF THE COUNCIL.

Held at the Union League Club, San Francisco, March 3, 1917, 12:10 p. m.

Present: Kenyon, Aiken, Ryfkogel, Hamlin, Jayet, Bine, Ewer, Edwards, Parkinson, Pope and Peart.

Dr. Parkinson voted for Dr. Hoisholt by proxy.

Dr. Parkinson made excuses for Dr. Hoisholt, stating that the doctor was in the hospital, recovering from a surgical operation. The Secretary was instructed to send condolences and sympathy.

Minutes of the eighty-ninth meeting were read and approved as read.

Mr. Peart's Report on Legal Defense: Mr. Hartley Peart made a lengthy report of current work of the legal department.

Moved by Parkinson, seconded by Ryfkogel, that the consideration of the rules for the Indemnity Fund be postponed to some future meeting, whereat they could be discussed at more leisure. Voted and carried. Mr. Peart's report on Legal Defense filed.

The Secretary's Report.

Promotion of Medical Research: Receipt of a bill which provides for the procuring of dogs and other laboratory animals by purchase from the public pound. This was referred to the Committee on Legislation.

Committee on Legislation: A complete list of the bills on medicine which will be presented before the Legislature were referred to this committee. Moved by Hamlin, seconded by Jayet. Bills filed.

Power of Publication Committee: That the Publication Committee be given power to reject papers that may be presented for printing in the State Journal. There are, at present, enough papers in type to supply the Journal for fifteen months; and because of this excess, it was deemed necessary to limit the number by careful choice and exclusion.

Stenographers at the Coming State Meeting: The question of stenographers at the coming State meeting was discussed and the Secretary was directed to look up the rule regarding this matter and give a report at the next Council meeting (See minutes of 71st Council meeting).

McLaren, Goode & Company: The bill of McLaren, Goode & Co., auditing the books and establishing a new bookkeeping system in the Secretary's office, was referred to the Auditing Committee for their approval. Moved by Hamlin, seconded by Bine. Voted and carried.

A letter from the American Medical Association asking that the Society approve of its agents who are being sent out to increase county membership was read; that it be placed on file. Moved by Parkinson, seconded by Hamlin. Voted and carried.

The question whether or not a multigraph should be purchased in the office was discussed and it was agreed by general consent that this matter should be continued and that no immediate action should be taken.

Society attorney instructed to draft information concerning the Indemnity Defense. Moved by Parkinson, seconded by Ryfkogel that the Society attorney be instructed to draft information concerning the Indemnity Defense, and have this printed on a separate slip and placed in the Register. This was to be sent to each member of the Society.

The matter of office expenses and the proper segregation of these was discussed by Ryfkogel. It was moved by Ryfkogel, seconded by Bine, that a list of rules and regulations concerning the conduct of the office, and preservation of its records, be drawn up by Mr. Peart and Dr. Pope, and that these should be binding upon the members of the office staff of the Medical Society.

An election of the trustees for the Medical Defense Fund was held. The names of Adams, Briggs and Lobingier were selected to fill this office. The Secretary was instructed to advise these gentlemen of their election, and to instruct them in their duties concerning the trust placed upon them.

Legislative Amendment Introduced by McKee: It was moved by Bine, seconded by Jayet, that the proposed legislative amendment introduced by McKee, which permits the free choice of physicians in industrial accident work, receive the commendation of the Council at its endorsement. Voted and carried.

County Secretaries' Attention Called to Article 12: It was moved by Ryfkogel and seconded by Aiken that the Secretary be instructed to write a letter to each of the County Secretaries and call his attention to Article 12 of the by-laws, and to warn the Secretary that members of these component societies, whose names do not appear on our roster by February 1st, and whose dues are not paid by March 1st, forfeit their membership and their medical defense. The Secretary was instructed that no exception shall be made to this rule. Voted and carried.

Medical Defense Rules to be Discussed: It was moved by Dr. Parkinson and seconded by Dr. Edwards that the Council meet some evening in the next two weeks, preferably March 17th, to discuss the Medical Defense rules.

The meeting was adjourned.

SAXTON POPE, Secretary.

PROPOSED AMENDMENT TO THE CONSTITUTION OF THE SOCIETY.

Proposed Amendment to the Constitution of the Medical Society of the State of California. (See page 100 of the 1916 State Medical Directory.)

The amendment deals with the first sentence of Article VI of the Constitution, relating to officers, and omits two assistant secretaries, and adds three councilors-at-large, so that this sentence of Article VI will read as follows:

"Section 1. The officers of this Society shall be a President, a First Vice-President, a Second Vice-President, a Secretary, a Treasurer, Examiners or nominees for appointment as members of the Board of Medical Examiners, as may be required by the laws of the State of California governing the practice of medicine, and fifteen Councilors, of whom one shall be elected from each of the nine councilor districts, and six Councilors-at-Large."

The remainder of the Section and Article to remain as it now reads.

MEDICAL SOCIETY

MEETS

IN CORONADO

APRIL 17th, 18th, 19th.

PROGRAM, MEDICAL SOCIETY, STATE OF CALIFORNIA, CORONADO, APRIL 17th, 18th, 19th.

TUESDAY MORNING, 9 O'CLOCK.

ADDRESS:
W. C. HARKLAND, Mayor of San Diego

INVOCATION:
REV. CHARLES SPAULDING, San Diego

ADDRESS OF WELCOME:
W. S. DORLAND,
President of Chamber of Commerce, San Diego

ADDRESS OF WELCOME:
F. R. BURNHAM,
San Diego County Medical Society

ADDRESS AND REPORTS OF COMMITTEES.
President's Address.....GEORGE H. KRESS

REPORT OF COMMITTEE ON MEDICAL LEGISLATION AND PUBLIC HEALTH.
PERCY T. PHILLIPS, Santa Cruz, Chairman.
C. C. Browning, Los Angeles; John C. King, Banning; W. A. Sawyer, Sacramento; N. K. Foster, Oakland.

REPORT OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION.
GEORGE TUCKER, San Francisco, Chairman.
J. H. Parkinson, Sacramento; William LeM. Wills, Los Angeles; F. F. Gundrum, Sacramento; F. B. Carpenter, San Francisco.

REPORT OF COMMITTEE ON PUBLIC HEALTH.
H. P. NEWMAN, Chairman.

REPORT OF COMMITTEE ON ARRANGEMENTS.
JOHN C. YATES, Chairman.
Alfred H. Byars, A. D. Long, H. Clifford Loos, Robert Pollock.

REPORT OF COMMITTEE ON SCIENTIFIC PROGRAM.
ALFRED B. GROSSE, San Francisco, Chairman.
Harry E. Alderson, San Francisco; R. A. Peers, Colfax; Fitch C. E. Mattison, Pasadena.

SECTION CHAIRMEN AND SECRETARIES.

Eye and Ear Section.
DR. B. F. CHURCH, San Francisco, Chairman.
DR. HANS BARKAN, San Francisco, Secretary.

G. U. Section.
DR. VICTOR G. VECKI, San Francisco, Chairman.
DR. WM. E. STEVENS, San Francisco, Secretary.

Gynecology and Obstetrics Section.
DR. E. N. EWER, Oakland, Chairman.
DR. A. B. SPALDING, San Francisco, Secretary.

Nervous Diseases and Psychiatry Section.
DR. ANDREW W. HOISHOLT, Napa, Chairman.
DR. ROSS MOORE, Los Angeles, Secretary.

REPORT OF COMMITTEE ON SOCIAL INSURANCE.
RENÉ BINE, San Francisco, Chairman.
F. F. Gundrum, Sacramento; Harry M. Sherman, San Francisco; Geo. G. Reinle, Oakland; Geo. E. Tucker, San Francisco; Geo. H. Kress, Los Angeles; Alice M. Woods, San Francisco.

REPORT OF COMMITTEE ON INDUSTRIAL ACCIDENT INSURANCE.
C. P. THOMAS, Los Angeles, Chairman.
John H. Graves, San Francisco; Morton R. Gibbons, San Francisco; John C. King, Banning; B. F. Church, San Bernardino.

TUESDAY AFTERNOON, 2 O'CLOCK.

2A TUBERCULOSIS SYMPOSIUM.

Arranged by R. A. PEERS.

1. COMPLEMENT FIXATION IN TUBERCULOSIS.

BENJAMIN JABLONS.

Experiments of early investigators:
1. Results.
2. Various types of antigens used.

Recent investigations:
1. Types of antigens used.
2. Results.

Comparative investigation of salt extract, alcoholic, ethereal, digested extracts and commercial tuberculins, with positive cases of tuberculosis.

Results of test with salt extract of polyvalent strains:
1. Pulmonary tuberculosis.
(2) Various stages.
2. Hodgkins disease.
3. Surgical tuberculosis.
4. Genito-urinary tuberculosis.
5. Eye cases.
6. In positive Wassermann cases.
7. In negative Wassermann cases.
8. In coccidioides infection.
9. In normal non-tuberculous cases.
10. In chlorosis.

Comparative results with positive Von Pirquet.

Character of immune bodies and comparison with antitryptic index of serum.

Discussion opened by MAX ROTHSCHILD.

2. DIFFERENTIATION OF SYPHILITIC AND TUBERCULOUS PULMONARY LESIONS.

WALTER KLOTZ.

Tuberculosis existing alone.
Syphilis existing alone.
Both conditions existing simultaneously.
Differential Diagnosis:
History—Course and Onset.
Physical Signs in Lungs.
General condition and condition of other organs.
Sputum Examinations—repeated.
Wassermann.
Complement Fixation of Tuberculous Antigens.
X-ray and Fluoroscope.
Treatment:
Indications and Contraindications for Salvarsan in cases with both syphilis and tuberculosis.

Discussion opened by WALTER BREM.

3. THE DIAGNOSIS OF TUBERCULOSIS.

GEORGE E. EBRIGHT.

Carelessness of history taking and incompleteness of examination the greatest sources of error in diagnosis.
History of patient:
Family tendencies.
Living surroundings and sources of contagion.
Occupation.
Age of patient:
Commonest types of tuberculosis in various periods.
Glandular tuberculosis.
Tuberculosis of joints and serous surfaces in children.
Pulmonary tuberculosis.
Predisposing factors to tuberculosis:
Natural immunity.
Acquired immunity.
Causes of reduction of immunity.
Symptomatology:
(a) General.
(b) Regional—central nerves—thoras.
Abdominal organs.
Physical examination.
Laboratory tests.
Animal tests.

Discussion opened by R. A. PEERS.

4. SOME FURTHER EVIDENCE OF THE SITE OF PRIMARY LUNG INFECTION IN THE HILUS.

PHILIP KING BROWN

A lantern slide exhibit of lung tuberculosis in which the primary infection evidently occurs in the hilus.

Discussion opened by M. P. BURNHAM.
P. H. PIERSON.

5. HELIOTHERAPY: ITS APPLICATION TO PEDIATRIC PRACTICE WITH SPECIAL REFERENCE TO BRONCHIAL GLAND TUBERCULOSIS.

WM. P. LUCAS.

Historical resumé of Heliotherapy. Its application hitherto has been mainly to bone tuberculosis. However, it has a very definite place in the treatment of bronchial gland involvement, not only tuberculous but also in other conditions which tend to lower the resistance of children. It is especially adapted to the treatment of children markedly below par who do not gain well under ambulatory treatment. The rest which accompanies the sun treatment as well as the diet and mechanical exercises are important factors in aiding the child to regain normal strength. Discussion of types of cases in which this has been tried and results. Limitations of heliotherapy and its wider application.

(20 minutes.)

(Lantern slides.)

Discussion opened by F. M. POTTENGER.

6. FACTS AND DEDUCTIONS FROM SIX YEARS' OBSERVATION OF AMBULATORY CASES OF TUBERCULOSIS.

C. C. BROWNING.

The author will cover the history and records on file during a period of six years.

Discussion opened by GEO. R. HUBBELL.

TUESDAY AFTERNOON, 2 O'CLOCK.

2B MEDICAL SESSION.

1. THE SIGNIFICANCE OF PERSISTENT PAIN OR OTHER SYMPTOMS REFERRED TO THE PERIPHERAL NERVES.

HAROLD WRIGHT.

Introductory:

The relation of the specialist to general medicine and the relation of the general practitioner or internist to the specialities.

The posterior nerve roots and pain; the sensitiveness of the dura mater, outer and inner layers.

Reflex pains in general; review of the sympathetic system.

(A) Cranial Nerves:

Gummatous infiltrations of meninges or the cranial bones; osteo-fibrous exostoses, post-traumatic or malignant; sinusitis; auto-toxic or focal infections with migraine; cerebral lues; brain tumor, e. g. cerebello-pontile angle and tic douloureaux; neuro-psychic headache, post-traumatic or functional.

(B) Cervico-brachial Nerves:

Arthritis of cervical spine with occipital neuralgia; arthritis of the shoulder with brachial pain; sub-deltoid bursitis; meningitis, luetic or pachymeningitis hemorrhagica; tuberculosis of the cervical vertebrae; fracture or subluxation of vertebrae; spinal cord tumor; giving pain in the shoulder often diagnosed "rheumatism" or "neuritis"; cardiac reflex pain; diaphragmatic pleurisy, giving reflex pain to the shoulder; aneurysm of the subclavian; postural strain; a frequently overlooked and common source of chronic pain between the scapulae, of "neurotic spine" and chronic ill health.

(C) Lumbo-sacral Nerves:

Tabes; frequency of laparotomy in tabes; luetic meningitis; cauda-equina tumor; aortic aneurysm; renal calculus; old fracture of vertebrae, unrecognized because of failure to properly x-ray; arthritis, hypertrophic and gonorrheal; of the spine and of the sacro-iliac joints; pelvic disease, in women especially; flat foot or weak foot; postural strain on the lumbo-sacral and the sacro-iliac joint; or from trauma; vicero-optosis, from postural defects, causing abdominal pains simulating appendix or gall bladder disease; the comparative rarity of essential sciatica with reflex sciatic pains; the greater frequency of postural strain as a cause of chronic backache in women than of pelvic defects.

2. KIDNEY FUNCTION IN CHRONIC NEPHRITIS AS DETERMINED BY MARSHALL'S UREASE METHOD FOR ESTIMATING BLOOD UREA NITROGEN.

E. H. FALCONER.

Von Jaksen in 1893 showed that there was marked increase in non-protein nitrogen in the blood in chronic nephritis. Much work has been done along this line by other investigators since. The work of Tilleston and Comfort in 1914 on estimation of non-protein nitrogen and urea of blood in health and disease furnished reliable figures for the normal. Estimation of total non-protein nitrogen is too time-consuming and requires too much special apparatus for use as a clinical procedure. In 1913 Marshall demonstrated that the ferment of the soy bean, called by him urease, was specific for decomposing urea into ammonia which can be easily estimated by driving over into 6/.50 HCl and titrating against N/50 NaOH.

Here description of apparatus and method follows.

This method has been followed at the University of California Hospital in the medical service of Doctor H. C. Moffitt. Cases selected for this report are those diagnosed as chronic nephritis or those whose clinical symptoms suggested that they might be classified as chronic nephritis. Kidney function in these cases was estimated by the phenolsulphonephthalein excretion in the urine and the urea nitrogen retention in the blood as determined by the urease method.

These cases have been tabulated according to clinical and laboratory findings as chronic nephritis primary, Table I and chronic nephritis secondary, Table II. These tables are arranged in such manner that one may correlate the history of symptoms, urinary findings, phthalein excretion, urea nitrogen retention in the blood and the clinical diagnosis with the post-mortem findings and subsequent history of the patient. It has not been possible to obtain the subsequent history of many of these cases. Only cases whose history or laboratory findings suggested chronic nephritis have been selected. In Table II the cases show a variety of pathological lesions. Only kidney lesions, however, appear to influence urea nitrogen in the blood. Whipple and coworkers have shown that in intestinal obstruction the total non-protein nitrogen is high but the urea nitrogen does not rise in proportion, an important point. Work is being done at present in the medical wards of the University of California Hospital tending to show that just before death the total non-protein nitrogen rises in the blood.

An analysis of tables I and II would seem to justify the following conclusions:

1. That in cases clinically chronic nephritis where the urea nitrogen is near or above 30 mg. per 100 c.c. of blood and the phenolsulphonephthalein excretion in the urine is low the case is probably a primary chronic nephritis of long standing and the prognosis is grave.

2. Cases clinically suggesting chronic nephritis and cardiovascular disease where the urea nitrogen is about 20 mg. per 100 c.c. of blood or below, are probably chronic nephritis secondary to primary cardiovascular disease. The phenolsulphonephthalein excretion in these cases may be low if there is chronic passive congestion of the kidneys present, otherwise it should be above 30%.

3. Cases whose urea nitrogen in the blood is between 30 mg. and 85 mg. per 100 c.c. of blood will probably not live longer than from six months to one year; where the urea nitrogen is over 100 mg. per 100 c.c. of blood the prognosis is a fatal termination in a few days to two or three weeks.

4. On account of the ease with which this test can be performed and the brief time consumed it is a practical clinical procedure and of definite value in estimating kidney function and in more accurate diagnosis and prognosis in chronic renal disease.

3. THE PRESENT STATUS OF THE WASSERMANN REACTION.

H. R. OLIVER.

1. A summary of the status of the test as result of personal observation based upon several thousands of tests.

2. The specificity of the test in regard to other diseases or foreign conditions that may cause either a positive or negative reaction.

3. A table of the percentage of positive reactions in the various stages of the disease and the different anatomical lesions.

4. The date of its appearance in the blood and some of the causes of its delay and factors so influencing.

5. The variations in the amount of binding substance in different sera.

A discussion of the so-called Wassermann fast cases.

6. The different results with different antigens.

7. The Wassermann reaction with spinal fluids and the dosages used, and the percentage of results with different cerebrospinal disease quantitatively.

8. Its use as a control on treatment—the so-called provocative test.

9. The interpretation of the results and the reading of the symbols so indicating.

10. Conclusions based on an analysis of the above results.

4. RESULT AND TREATMENT OF ONE THOUSAND CASES OF DELIRIUM TREMENS.

R. E. BERING.

This paper deals with cases from private practice, and from the author's services at the Central Emergency and the Lane Hospitals. The symptomatology of the various types of the disease is taken up with appropriate methods of treatment adapted to each particular type. Complications and their treatment, the percentage of recoveries and the percentage of mortality is next considered. Results are tabulated and conclusions drawn.

5. COMPLICATING SECONDARY PATHOLOGY IN GASTRO-INTESTINAL SURGERY.

CHAS. B. HARE.

Gastro-intestinal disturbances when surgical are seldom simple but usually complicated by secondary affections a result of the primary pathology.

The most common chronic affection demanding surgical interference is chronic appendicitis, congenital or acquired, and its sequelae.

Pathological states that are subjects of operation may be secondary to some primary focus, their symptoms overshadowing the symptoms of the primary disease; and under these circumstances the predominant symptoms may be considered primary; the cause initiating them occupying a less prominent position but demanding surgical attention at the same time to effect a cure.

Before surgical interference is undertaken every effort should be made by means of a history and barium analysis to arrive at all of the factors entering into the disturbance, the operator should not be satisfied, however, with pre-determined conclusions, but when the abdomen is opened should inspect all of the sphincters, the bile tract, gall bladder and the sigmoid in all its bearing.

WEDNESDAY MORNING, 9 O'CLOCK.

3A SURGICAL SESSION.

1. INTERNAL HEMORRHOID OPERATION AND AFTER CARE UNDER QUININE-UREA HYDROCHLORIDE ANESTHESIA.

E. JAY CLEMONS.

Synopsis: The object of this paper is not to add anything new to medical literature but to present, with due respect to other Proctologic technic, a technic which will relieve our patient—pleasantly, safely and quickly; classifying internal hemorrhoids in terms of degree; bringing out the object of operative interference; giving some of the operative and post-operative advantages of quinine-urea hydrochloride anesthesia; describing the operative technic, in four stages; concluding with the post-operative care and conclusions.

2. PAINFUL CONDITIONS IN AND ABOUT THE SHOULDER JOINT—THEIR DIAGNOSIS AND TREATMENT.

ARTHUR L. FISHER.

Apparent indefiniteness of the painful conditions in and about the shoulder; reasons for such indefinite ideas; lack of systematic methods of diagnosis of such conditions.

Innumeration of conditions causing pain in shoulder region.

Scheme of Diagnosis:
- Methods of examining patient himself.
- X-rays and their interpretation.
- Laboratory methods.

Treatment:
- Present treatment more or less empiric.
- Suitable methods of treatment following positive diagnosis.

3. THE VALUE AND LIMITATIONS OF THE MOVING PICTURE IN TEACHING SURGERY.

JAMES T. WATKINS.

Synopsis: The moving picture as a teaching aid has come to stay. Advantages are that group teaching is simplified; the operations can be repeated as often as necessary; the operations can be transported to other communities. Disadvantages are that thus far only operations on the surface of the body or near its surface can be pictured; that only in blood-free operations can fine technic be shown; that the problem of differentiation of tissues has not yet met with a practical solution.

(15 minutes.)

Discussion opened by W. B. DAKIN.

4. THE CORRECTION OF MALUNITED FRACTURES.

P. S. CAMPICHE.

Owing to certain adverse circumstances, faulty union still occurs in a large number of fractures.

The surgeon and the patient then become so discouraged that no further step is taken for a long time, some patients remaining many months in a crippled condition before another surgical intervention is proposed and accepted.

Such pessimism and discouragement on the part of the treating surgeon is excessive and unjustified. Even in cases that have apparently ended in disaster, surgery and patience can often restore enough function and save quite a good deal from the wreckage.

Instances of such "salvage surgery":

A—for the upper extremity.
B—for the lower extremity.

Conclusions.

(10 minutes.)

Discussion opened by A. S. LOBINGIER.

5. AN EXPERIMENTAL STUDY OF THE RESECTION OF THE KNEE-JOINT.

JOHN F. COWAN.

Conclusions drawn from experimental work done on the knee joints of dogs in the laboratory of surgical pathology of Stanford University Medical School. To this is added a description of tissue removed from human joints that had previously been resected.

(12 minutes.)

Discussion opened by ELLIS JONES.

6. FRACTURES OF THE NECK OF THE FEMUR.

S. J. HUNKIN.

A plea for more optimistic ideals and a more consistent plan of treatment.

It considers the structural changes which generally lead to such fractures and which also interfere with its repair. Speaks of the results, expected and attained, after the usual plan of treatment and considers the average bad result due to two things:

1st—The pessimistic outlook of the doctor.
2nd—The bad mechanical efficiency of the ordinary plan of treatment.

It deals with later methods which are eminently superior, suggests a plan of his own in certain types. The author thinks proper splinting to be of absolute importance and argues that under careful planning and ordinary circumstances practically as good end results can be expected as with corresponding fractures elsewhere.

(15 minutes.)

Discussion opened by H. A. L. RYFKOGEL.

7. THE EMPLOYMENT OF THE INTRAMEDULLARY BONE SPLINT IN FRACTURES.

CHARLES G. LEVISON.

(a) Advantages of this graft over the bone inlay.

(b) Removal of the graft from the fractured bone, doing away with the necessity for operating the uninjured leg.

(c) Comparison of the results of the intramedullary graft with the bone inlay.

(d) Has the bone graft rendered the Lane plate unnecessary?

(15 minutes.)

Discussion opened by W. W. RICHARDSON.

WEDNESDAY MORNING, 9 O'CLOCK.

3B MEDICAL SESSION.

1. RADIUM—ITS LOCAL APPLICATION AS A THERAPEUTIC AGENT.

REX DUNCAN.

The author discusses briefly some of the physical properties of radium, the various forms of applicators and technique of application, with especial reference to dosage, screening, etc. The action of the rays and histological changes produced in morbid tissues by radiation are briefly described. The value of radium in the treatment of various malignant and non-malignant conditions is considered, including certain skin diseases, exophthalmic goiter, spring catarrh, angiomata, uterine fibroid, epitheliomata, sarcomata and carcinomata with especial reference to the carcinomata uteri. A large number of cases treated by the author are reported.

Discussion opened by C. G. TOLAND.

2. HODGKIN'S DISEASE AND ITS TREATMENT—WITH A REPORT OF CASES.

W. W. BOARDMAN.

I. Introduction:
   Descriptive definition.
II. Body:
   Brief of historical review.
   Review of recent work on etiology.
   Absence of a specific therapy.
   Consideration of our present therapeutic measures.
   Report of cases.
III. Conclusions.
(15 minutes.)

Discussion opened by R. L. CUNNINGHAM.

3. BOTULISM.

ERNEST C. DICKSON.

The report will consist of a discussion of this type of food poisoning which is endemic on the Pacific Coast. It will include:

1. A report of ten unrecorded cases which have occurred in California and in Oregon within the past three years.

2. A discussion of the pathologic findings as illustrated by two autopsies and a series of experimental investigations.

3. A discussion of the etiology as illustrated by the reported cases and also by experiment.

There will be a series of lantern slides to illustrate the important pathologic changes.

Discussion opened by ROBERT SMART.

4. MULTIPLE SEROSITIS—REPORT OF A CASE WITH AUTOPSY FINDINGS—DISCUSSION OF ITS CLASSIFICATIONS.

GEO. H. EVANS.
M. J. PRICE.

Reference to the classification given by Kelly, Rolleston and others is given.

Pick's disease is not synonymous with multiple scrositis. A broader classification is necessary. Author's case differs from those included in Kelly's monograph in that it did not present obliterative pericarditis but rather pericardial effusion. Clinical findings of case presented and discussion of autopsy report.
(15 minutes.)

Discussion opened by E. von Adelung.

5. RAT-BITE FEVER.

F. F. GUNDRUM.

Definition.
Distribution: California cases.
Etiology.
Transmission.
Pathology.
Incubation.
Symptoms: Skin; glandular; temperature; blood; urine; complications.
Prognosis.
Prophylaxis.
Treatment.
Report of Cases.
(10 minutes.)

Discussion opened by DAN H. MOULTON.

6. CELLULAR AND HUMORAL FACTORS IN ANAPHYLAXIS AND IMMUNITY.

W. H. MANWARING.

Summary: An analysis of the anaphylactic and immune reactions by means of the isolated rabbit heart, the isolated guinea pig lung, and the isolated guinea pig liver.
(15 minutes.)

WEDNESDAY AFTERNOON, 2 O'CLOCK.

4A EYE, EAR, NOSE AND THROAT SESSION.

Session of General Interest,

Arranged by HANS BARKAN.

1. TUBERCULOSIS OF THE EYE.

PHILIP H. PIERSON.

Abstract: The main lymph channels of the eye and their drainage; a brief description of the most important lesions produced by tuberculosis; its diagnosis with special reference to latent tuberculosis elsewhere in the body and the use of tuberculin; the treatment of ocular tuberculosis general, and with tuberculin.

2. LARYNGECTOMY INDICATIONS AND TECHNIC.

H. B. GRAHAM
and L. C. DRAPER.

Abstract: The authors will describe the methods of laryngectomy and will discuss the pathological indications for operative procedures in cases of carcinoma of the larynx, including the intra-laryngeal and extra laryngeal operations.

3. AN IDEAL INTRACAPSULAR EXTRACTION FOR CATARACT.

LLOYD MILLS.

Abstract: Those American sponsors for the Smith "Indian" cataract extraction, who are spreading among untrained or poorly-trained men the gospel that the Smith technic is easily acquired and easy of safe human application, are doing a most excellent operation a serious injustice.

That extraction of the lens in its intact capsule is the ideal form of extraction is beyond debate, but the present consensus of opinion among American ophthalmologists is strongly to the effect that the Smith operation is one to be undertaken only by men whose technic is skilled and whose control and judgment are not easily shaken during the startling emergencies of intraocular surgery.

The faults of the Smith operation as applied to cataracts without selection are (1) the frequency of unintentional capsulotomy in those cases where the anterior chamber is shallow, nearly all the capsule being left behind, together with much more cortex than usually remains after the most bungling capsulotomy operation; (2) in the Smith extraction with iridectomy, as advocated, delivery of the encapsulated lens becomes too easy and if the delivering pressure is continued too long or too ungently, or if the frail hyaloid membrane, now supporting the dislocated and bulging vitreous without aid from the iris, be subjected to the additional stress which so surely follows subduction, then sudden rupture of the hyaloid occurs, with loss of vitreous and more or less extensive prolapse of the pillars of the operative coloboma.

Reasoning from the ease of delivery of the encapsulated lens through the intact pupil in the eyes of pigs and kittens and from the splendid results of simple extraction combined with the fine peripheral iridectomy of Chandler (Hess-Pflüger), Mills, using the Smith incision, has made the successful application of this form of iridectomy, after the delivery of the lens in its capsule through the intact pupil. The iridectomy is safely performed after the pupil has been strongly contracted by 1% eserine for ten to twenty minutes, the flattening of the iris produced thereby, molding the dislocated and bulging vitreous back into place and away from the wound.

1% eserine is instilled with especial care twice daily for the first week of convalescence.

This operation is applicable to any form of cataract which is associated with an anterior chamber of sufficient depth to preclude an unintentional capsulotomy.

The final result is cosmetically and visually perfect. The small central or nearly central pupil is mobile, the intact ring of iris prevents excessive flooding of the fundus with light and, save on close inspection, the operated eye can seldom, if ever, be distinguished from its fellow.

4. END RESULT IN THE TREATMENT OF OZENA BY MEANS OF VACCINE.

HENRY HORN.

Abstract· Recapitulation of bacteriological findings; results reported last year confirmed in every particular; summary of results on last year's series of cases; results of treatment of present series; conclusions.

WEDNESDAY AFTERNOON, 2 O'CLOCK.

4B GENITO-URINARY SYMPOSIUM.

Arranged by ALFRED B. GROSSE.

1. PRACTICAL VALUE OF THE COMPLEMENT FIXATION TEST IN GONORRHEA.

MARTIN KROTOSZYNER.

This communication is based upon the result of over 500 sero-diagnostic examinations of all types of gonorrheal infections that came under the author's observation during the last two years. A careful tabulation of the material on hand is presented with a view to arrive at deductions of practical value for physicians and patient. The points particularly interesting and in need of further elucidation, in this connection, are:

Relation of serological to clinical findings and its practical significance; change serological result from positive to negative as index of extinction of infection; value of test with regard to the all important questions of continued infectiousness and contemplated matrimony.

Conclusions.

2. FREQUENCY AND SIGNIFICANCE OF CASTS IN THE URINE.

STANLEY BLACK.

Formation of casts in the urine.
Cylindroids.
The methods of search of the urine for casts.
Casts found in healthy individuals; that is, without any other evidence of disease.
Casts found in pathological kidney lesions.
Significance of casts and cylindroids.

3. DEMONSTRATION BY MEMBERS OF PYELOGRAMS AND X-RAY PLATES DIAGNOSTIC OF KIDNEY TUMOR.

Discussion opened by GRANVILLE MACGOWAN.

THURSDAY MORNING, 9 O'CLOCK.

5A SURGICAL SESSION.

1. GROUP STUDY IN THE ESTIMATION OF SURGICAL RISK.

F. W. BIRTCH.

(a) The consideration of surgical risk in its broader aspect, such as mortality, morbidity, delayed recovery, complications, etc.

(b) The consideration of the mistakes in diagnoses as being responsible for the medical profession's shortcomings in being able to forecast the outcome of an operation,—as based upon the reports from literature in autopsy findings, operative descriptions and the results from treatment.

(c) A presentation of a scheme for estimating the surgical risk,—from the statistics of the Diagnostic Section of St. Luke's Hospital.

(d) The conclusion will bring out the probable effect such groups will have on the future of surgery.

(15 minutes.)

Discussion opened by F. F. GUNDRUM.

2. EXOPHTHALMIC GOITRE—INDICATIONS FOR SURGICAL INTERVENTION—CHOICE OF PROCEDURE.

A. B. COOKE.

This discussion limited to exophthalmic goitre or Graves' disease. Hyperthyroidism and thyrotoxicosis preferable designations, since exophthalmos not a constant or essential feature. Always to be considered a formidable disease with little tendency to spontaneous recovery.

The factors of danger in hyperthyroidism; how death is caused.

The heart the most important guide in determining the line of management. If improvement not at once apparent under hygienic and medicinal treatment, surgical intervention to be considered. This to be resorted to early, since the danger rapidly increases with delay. Many cases lost which might be saved by prompt surgery.

In deciding upon the surgical procedure each case to be judged on its own merits. Experience the only safe guide. Important to bear in mind Crile's dictum that "it is the first surgical contact which kills these patients."

In favorable cases always desirable to adopt at once the curative procedure, i. e., lobectomy. When this involves too great hazard, ligation of the superior thyroid arteries should be done and the radical operation deferred until the improvement warrants it. The injection of boiling water has nothing to commend it.

Anoci-association offers the safest method for handling these cases.

(12 minutes.)

3. AMPUTATION STUMPS AND ARTIFICIAL LEGS.

LEO ELOESSER.

Requirements of stumps; physiological stumps, end-bearing and side-bearing; pathological stumps, pain, ulceration, atrophy; causes, neuromas, periostitides, scars, insufficiency of skin and soft parts, atrophy of disuse; prophylaxis; treatment of bone and soft parts at primary operation; treatment of neuromas, ulcers, periostitides; stump-plastics.

Artificial legs: How the leg carries the wearer, end-bearing and side-bearing stumps; how the wearer carries the leg; suspension of leg after Dollinger, suspension from shoulder-braces and belts.

(15 minutes.)

Discussion opened by EMMET RIXFORD.

4. TUMOR OF THE CAROTID GLAND.

STANLEY STILLMAN.

A brief résumé of cases previously reported.

A consideration of the mortality following ligation of the common carotid, which has usually been done in the removal of this growth.

Report of a case of successful removal without ligation of either common or internal carotid.

Report of two other cases; one with ligation of the common carotid with a fatal termination; the other with ligation of the common carotid with recovery of the patient.

5. DIVERTICULUM OF THE DUODENUM.

E. C. MOORE.

Report of a case; literature on the subject; lantern slide exhibit.

6. SOME IMPORTANT FACTORS IN DISEASES OF PERIPHERAL NERVES.

THOMAS G. INMAN.

Causation:

A. Individual vulnerability.
   1. Racial and familial tendencies often not definitely ascertainable; phylogeny of peripheral nerves, an unknown factor in their diseases.
B. Toxic influences.
   1. Poisons introduced from without.
   2. Poisons formed within the body.
      a. Bacterial.
      b. Metabolic.
C. Physical causes.
   1. Nutrition.
   2. Temperature.

Pathology and Distribution:

A. Radiculitis sometimes not to be distinguished from an affection of the peripheral nerve which carries the fibers of the affected root.
B. Posterior root ganglionitis more often the cause of nerve disturbances than is generally supposed.
C. Elective disturbances of various types.

Prognosis:

A. Depends upon the nature and amount of pathology present and the ease or difficulty of removing the cause; course often necessarily long and this fact must be impressed upon the patient at the beginning of treatment.
B. Detrimental influence of coincident diseased conditions.

Treatment:

A. Removal of cause if this can be determined and care of all conditions which mitigate against recovery.
B. Care of focal infections, arterio-sclerosis, etc.
C. Counter irritation.
D. Massage.
E. Heat; diathermia.
F. Improvement of general condition.

Incidence of peripheral nerve disturbances and causative factors in 300 cases completely examined.

(10 minutes.)

THURSDAY MORNING, 9 O'CLOCK.

5B MEDICAL SESSION.

1. MOVING PICTURE STUDIES OF THE MOTOR PECULIARITIES OBSERVED IN STEREOTYPIC AND KINDRED MUSCULAR MOVEMENTS IN FORMS OF DEMENTIA-PRAECOX AND IN THE MOVEMENTS OF HUNTINGTON CHOREA.

A. W. HOISHOLT.

1. The nature of negativism and the manner in which it is reflected in muscular movements; stereotypy in posture and movements; case histories; kinetoscopic demonstration of the manner in which the repetition of certain more or less complicated muscular movements, varying in form and duration, are interrupted by statue-like crystallizations, leading to manifestations of phases and pauses.

2. Kinetoscopic pictures of the peculiar, irregularly jerky, large excursioned movements of trunk and extremities in two women patients presenting symptoms of an advanced stage of Huntington chorea.

(30 minutes.)

2. PERMEABILITY OF THE MENINGES TO ARSENIC IN PARESIS AND TABES.

J. H. BARBAT.

Previous work would indicate that meninges are almost impermeable to arsenic. By author's technic, arsenic can be demonstrated in almost all cases, 24 hours after its intravenous administration. Technic; report of cases; advantage over Swift-Ellis method.

(10 minutes.)

3. ULCERATIVE COLITIS.

H. C. MOFFITT.

Introduction to deal with a short sketch of the occurrence of entamebic and bacillary dysentery in Cali-

fornia. Mention only of the ulcerative colitis of diphtheria, nephritis, tuberculosis, intoxications.

Clinical picture of ulcerative colitis here considered:

1. Type with superficial hemorrhagic erosions and shallow ulcers; secondary anemia and occult blood in stools sometimes the only clinical symptoms.
2. Type with fever, wasting and other symptoms of a general infection with few local symptoms.
3. Type with deep ulceration, marked local symptoms and secondary stenosis of the gut; frequent limitation to short segments of the colon, especially the upper rectum.
4. Chronic type often affecting a small portion of the colon without symptoms until stenosis occurs; peculiar local extension of this process even after resection of portions of the bowel; polyposis frequently associated with other hypertrophic changes in the gut.
5. Acute or chronic types with diarrhea, cachexia and frequent fatal termination associated with ulceration, superficial or deep, throughout the colon; difficulty of separating this type from chronic amebiasis.
6. General clinical résumé of the affection, literature and case reports; pathology, bacteriology, pathological specimens; medical treatment, local and general; surgical treatment by appendectomy, colostomy, resection.

(15 minutes.)

Discussion opened by RAE SMITH.

4. TREATMENT OF HEMORRHAGIC CONDITIONS.

S. H. HURWITZ.

Brief consideration of the normal factors concerned in the clotting of blood in health and their variations in disease.

Discussion of an etiologic classification of hemorrhagic diseases based upon some abnormality existing in one of the factors concerned in the clotting of blood in health.

A consideration of the more important clinical methods now available for the study and classification of this group of disease with special emphasis upon those methods whose simplicity render them clinically useful.

Brief discussion of a rational and critical therapy for the constitutional treatment of the hemorrhages observed in bleeding conditions with special reference to the knowledge gained from a study of these conditions by present day methods.

Discussion opened by WALTER BREM.

5. MAGNESIUM SULPHATE INTRAVENOUSLY IN BACTERAEMIA.

W. H. STRIETMANN.

Review of Harrar's work, and method; effect on animals of magnesium sulphate alone; author's modification and difference in effect following its use; case reports of Streptococcus Viridans, Streptococcus Hemolyticus, Colon and Influenza Bacteremias; theoretical possibilities as to mode of producing effect. Conclusions.

6. THE RELATION OF MEDICINE TO CRIMINOLOGY.

JAU DON BALL.

Synopsis: Definitions; Examination of the Criminal; Medical Causes of Crime; Sociological, Neurological and Serological Aspect of Prostitution; Discussion of Interrelationship of Crime and Prostitution and Their Connection with Medicine; the Juvenile Delinquent; Prophylactic Measures.

(15 minutes.)

THURSDAY AFTERNOON, 2 O'CLOCK.

6A SYMPOSIUM ON FUNCTIONAL PATHOLOGY.

Arranged by FITCH C. E. MATTISON.

1. THE RELATION OF THE VEGETATIVE NERVOUS SYSTEM TO INTERNAL DISEASE.

F. M. POTTENGER.

Vegetative nervous system composed of two antagonistic divisions; sympathetic and greater vagus; normal action holds equilibrium in all internal viscera; disturbance in either division produces functional derangement; relation of symptomatology in internal disease to vegetative system; relationship to the internal secretions.

Discussion opened by THOMAS ORBISON.

2. THE RELATION OF THE ENDOCRINE GLANDS TO FUNCTIONAL DISORDERS.

HENRY H. HARROWER.

Many if not all metabolic disorders have as their fundamental pathology a disturbed function of certain of the glands of internal secretion. The study and treatment of the so-called "chronic" diseases is made doubly profitable if the functional capacity of the thyroid, adrenals, pituitary and gonads is investigated. The thyroid, especially, is concerned with many every-day disorders from colds to neurasthenia.

3. THE PATHOLOGICAL PHYSIOLOGY OF THE THYROID.

CLARENCE TOLAND.

Discussion opened by E. H. SCHNEIDER.

4. THE RELATION OF THE HYPOPHYSIS TO THE DISORDERS OF NUTRITION.

W. W. ROBLEE.

Brief statement of facts concerning the physiology of the gland; the pathology underlying hyper and hypo-pituitarism; report of case of hypo-pituitarism, showing great improvement under treatment.

Discussion opened by WALTER BREM.

5. METABOLISM AND DISEASE.

LORENA M. BREED.

Chemical composition of body; body processes; chemical substances which increase protein metabolism; substances which depress protein metabolism; results of altered chemical processes in the body.

Discussion opened by R. S. CUMMINGS.

THURSDAY AFTERNOON, 2 O'CLOCK.

6B MEDICAL SESSION.

1. VALUE OF THE WASSERMANN TEST IN NEWLY-BORN.

H. H. YERINGTON.

1. Blood Findings in the newly-born.
   - A. Large percentage of Positive Wassermann findings in cord bloods.
   - B. Value of heel-blood examinations.
2. Points to be considered in the work.
   - A. Type of cases.
   - B. Reliability of blood work and technic.
   - C. Tests on mothers, fathers, children.
   - D. Histories, autopsies, placental pathology.
3. Comparisons of the bloods of mothers, fathers and infants.
4. Placental pathology.
   - A. Positive and suggestive cases.
   - B. Still-births and abortions in relation to placental findings.
5. Follow-up work.
   - A. Observation of suggestive infants after delivery.
   - B. Comparison of later blood tests with those made at birth.
6. Conclusions.

(15 minutes.)

2. MONGOLISM.

RACHAEL L. ASH.

Langdon-Down, in 1866, first described that variety of congenital imbecility which bears a certain physical resemblance to the Mongolian race.

Mongolism occurs in all countries. It forms five to eight per cent. of the feeble-minded in institutions. As the great majority of these imbeciles, owing to their lack of resistance to pulmonary and kindred disorders, die in early childhood, their actual number must be very much greater.

These children, in more than fifty per cent. of the cases, are the last born of repeated pregnancies, where one or both parents approach or are in the fourth decade. Hence, we may consider sexual exhaustion—functional disturbance of the reproductive organs and their related glands of internal secretion—as the great etiological factor.

As dentition, locomotion and speech are very much retarded, mongolism must be carefully differentiated from cretinism, rachitis, amyotonia congenita and chondrodystrophy.

(To be given in connection with lantern slides.)

Discussion opened by ROSS MOORE.

3. THE USES OF EIWEISS MILK.

LANGLEY PORTER.
FLORENCE HOLSCLAW.

1. Diarrheas in infancy; their etiology.
2. Classifications of Diarrheas.
   Etiological—clinical.
3. The conception of diarrheas as phases of metabolic disturbances.
4. The Finkelstein classification of metabolic disturbance with a special reference to dyspepsia.
5. The Milch Naehr Schaden of Czerny. Its origin in putrefactive processes in the bowl.
6. Finkelstein's idea that putrefaction may be utilized to combat fermentation.
7. The factors that encourage putrefaction; (a) high protein; (b) high fat; (c) high salts; (d) low carbohydrates, preferably maltose; (e) absence of lactose.
8. The chemistry—high calcium soap production. Low fatty acid production.
9. The elaboration of Eiweiss Milch; (a) the early formula; (b) the disastrous results of restricting sugar. Finkelstein's change of view.

10. The N. Y. Baby Hospital Modification.
    The salt water washing.
    The addition of fat in refractory cases.
    Value in infectious cases.
    The need for either hygienic and therapeutic measures.
    Illustrative cases.

Discussion opened by LEO MEININGER or GEO. LYMAN.

4. THE LIVER FUNCTION IN CHILDREN.

J. A. COLLIVER.

Research work in Prof. von Pirquet's Kinderklinik, Vienna, based on ingestion of from 10 to 80 grams of galactose in 65 pathogenic and 50 normal children; method; amount and time of elimination in each case; qualitative test, urobilin, bile pigment and aldehyd; quantitative sugar with polaroscope; tabulation of normal cases; icterus-haemorrhagica; chlorosis; tuberculosis, etc. Conclusion.

Camphor Elimination in Children.

Research work in Prof. von Pirquet's Kinderklinik, Vienna, based upon ingestion of from 1 to 2 grams of camphor in 16 normal and 10 pathogenic cases. Method; amount and time of elimination; orcin test; naphthoresorcin test; phloroglucin test; quantitative camphor elimination by polaroscope; tabulation and conclusion.

5. SOME PROBLEMS IN STARCH DIGESTION IN INFANCY AND CHILDHOOD.

E. C. FLEISCHNER.
A. E. MEYERS

1. Frequency of starch intolerance.
2. Physiology of carbohydrate digestion.
3. Symptom-complex of starch disturbances.
4. Possible factors determining disturbances in the physiology.
   (a) Abnormal ferments.
   (b) Abnormal peristalsis.
   (c) Abnormal bacterial flora.
5. Stool examinations as a means of determination.
6. Test diets as a means of determination.
7. Normal carbohydrate diet in infancy and childhood.
8. Variations from normal in disturbances of digestion.

Discussion opened by W. P. LUCAS.

6. THE TREATMENT OF INFANTILE PARALYSIS.

JOHN CARLING.

Acute Stage. Proper treatment minimized damage to muscles. The importance of orthopedic measures to prevent deformity.

Sub-Acute Stage. Danger of overstraining weakened muscles. Measures to restore lost power.

Chronic Stage. Correction of deformity, if present. Measures to restore balance of muscular power and stability of joints.

Post-operative treatment to strengthen transplanted muscles and train them to co-operate with others.

TUESDAY AFTERNOON, 2:30 O'CLOCK.

PROGRAM OF THE EYE, EAR, NOSE AND THROAT SECTION OF THE CALIFORNIA STATE MEDICAL SOCIETY.

1. REPORT OF A CASE OF DEAFNESS OF SEVENTEEN YEARS' STANDING WITH SEEMING RECOVERY.

H. STAATS MOORE.

This is a report of a recovery of a reported deaf ear—the deafness caused by an accident when very young—followed by years of deafness and without any cause—a return of hearing—he had been examined by a number of men some years past and told his hearing would never be recovered.

2. CONGENITAL OCCLUSION OF THE NOSE.

HARVARD McNAUGHT.

Causes of congenital occlusion. Rarity of condition. Brief review of development of nose in foetal life. Operative measures in use for relief of condition and their defects. Report of author's case. Description of an original method of operation for correction of this condition.

3. HEADACHE AND SECONDARY SYSTEMIC DISTURBANCES CAUSED BY INTRANASAL AND NASAL SINUS CONDITION.

ADOLPH BAER.

A review of Oro, Naso, Pharyngeal conditions frequently overlooked as possible etiological factors in production of headache. In the mouth caries; pyorrhea; pericementitis; acute abscesses; chronic abscesses at the root of apparently healthy teeth; pulp stones; uncrupted and impacted teeth; necrosis of maxillary bones; neoplasms at base of tongue, salivary [illegible] and [illegible]. In the pharynx, purulent tonsils and adenoids, and post nasal fibromata, in the nose deviated septa, hypertrophied turbinates, hypertrophies of septum tuberculi, uncinate process, bulla ethmoidalis, polypoid degenerations and purulent suppurations in the antrum, frontal, ethmoid, and sphenoid sinuses.

Acting either as sites of focal infection producing headaches by auto-intoxication, or by pressure causing reflex and referred nerve pains.

4. MALIGNANCY OF THE MIDDLE EAR AND MASTOID.

F. A. BURTON.

Introduction condition rare, probable reasons for its infrequency.

Review of Literature:

Report of a case occurring in author's practice, of epithelioma, probably beginning in middle ear, the extent of its involvement, microscopical report of pathologist, micro-photographs and post mortem findings.

WEDNESDAY MORNING, 9:30 O'CLOCK.

1. SOME NEW POINTS IN THE TECHNIC OF THE SUBMUCOUS RESECTION.

F. M. SHOOK.

The Submucous Resection of the Nasal Septum. Indications for and technic.

I. Impaired respiration of nasal origin.
   1. Causes.
   2. Results.
      a Tubo-tympanic inflammation.
      b Chronic catarrhal Otitis.
      c Impaired sinus drainage with resulting pathological changes.
      d Reflex conditions.
         Asthma and spheno palatine ganglion neuralgia.

II. Technic.
   1. Anesthetization.
      a Author's method.
   2. The incision.
   3. Methods of elevation of the mucosa.
   4. Resection of the cartilage—a safe method with no danger of dislocation of the cartilage.
   5. A safe method of isolating the bony septum from danger areas.
   6. Dissection and removal of nasal spine.
   7. Removal of nasal ridge.
   8. The cutting and suturing of the mucous membrane flap.
   9. The post-operative packing.
      Illustration of technic with anatomical preparations.

2. WHAT CAN WE DO TO IMPROVE OUR BUSINESS METHODS?

P. A. JORDAN.

One physician to every six hundred people in the United States. An increasing number of specialists. Very few doctors of old school; nearly all doctors now enter the field as a business, productive of a livelihood. Majority of doctors die in poverty, and before ripe old age. Thinks only of the malady of patient; often a near-failure as to business methods of his office; and generally an unwise investor. Lack of business training dates back to his Alma Mater, which gave not a hint as to business application of scientific knowledge so generously offered.

3. A CASE OF CONGENITAL ANIRIDIA AS A FAMILIAR SEQUENCE.

WALTER S. FRANKLIN.
E. F. GLASER.

Mrs. [illegible], twenty-three years of age, double-sided aniridia, eyesight poor since childhood. Right eye shows opacities in lense and excavation of nerve-head. Left eye marked corneal opacities. Tension increased in both eyes; vision markedly reduced. Mother blind, grandfather blind, one sister confined in blind asylum in British Columbia (have not yet received notes on her case). Parents' two-year-old baby has double-sided aniridia.

4. REPORT OF AN UNUSUAL FAR CASE.

C. F. WELTY.

Cerebral complications always require the most careful consideration.

The differential diagnosis between brain abscess, meningitis and infectious sinus thrombosis are not easily made.

Again, there are other conditions that may arise during the course of an acute mastoiditis that may make such a diagnosis impossible. Therefore, everything should be done to clear the field, as a life hangs in the balance.

THURSDAY MORNING, 9:30 O'CLOCK.

1. LANTERN SLIDE EXHIBIT OF EYE CASES WITH COMMENTS ON DIAGNOSIS AND TREATMENT.

HANS BARKAN.

The pictures shown are of some rarer forms of eye and nervous lesions, and of a series of the more common eye affections; they are shown mainly to bring out discussion in treatment pursued by the members of section, it being the belief of writer that a discussion of various methods of treatment of the common ocular maladies might be of mutual benefit.

2. REPORT OF A CASE OF OTITIC MENINGITIS.

E. C. SEWALL.

Patient presented clear picture mastoid abscess. Streptococcus mucosus type. No discharge from the ear for three months and then questionable. Symptoms of meningitis. Spinal fluid under pressure, great increase in leucocytes in spinal fluid, polymorphonuclear type, nystagmus. Mastoid operation. Disappearance of nystagmus. The cell count at repeated daily examinations of spinal fluid showed steady decrease in cells; exitus. P. M. showed no evidence of path of infection to meninges. Histological examination of temporal bone.

3. A STUDY OF AUTO-SERO THERAPY IN CERTAIN EYE DISEASES.

W. F. BLAKE.
W. T. CUMMINGS.

Intravenous inoculations of animals with bacterial suspensions to determine any selective tendency toward infection of eye tissues.

A study of certain common eye lesions to determine if they are toxic or infectious in origin.

A study of use of auto serum,—subconjunctival injections—its apparent effect, and histological study of reactionary process in tissues of eye.

4. CLINICAL OBSERVATIONS OF CATARACT OPERATION.

JOHN J. SMITH.

This paper is a treatise on determining whether a preliminary iridectomy should be performed before attempting an extraction.

Careful consideration is given to a description of the conditions which may be present in the affected eye from which the writer draws his conclusions as to whether he will perform the ordinary cataract operation, the Hess operation, the Homer Smith operation, or the Smith-Indian operation.

Mention is made also of his success in treating immature cataracts by absorption methods.

THURSDAY AFTERNOON, 2:30 O'CLOCK.

1. THE INVISIBLE SPECTRUM AS AN OCULAR IRRITANT.

T. C. POUNDS.

The forms of radiant energy under discussion are found beyond the two extremes of the visible spectrum and consist principally of the infra-red, or dark heat rays, and the ultra-violet or chemical rays.

A brief consideration of their properties show them capable of affecting the tissues both superficially and by penetration, especially when the exposure is prolonged or excessive. These facts have been demonstrated experimentally and clinically. Many of the conditions of the eye due to exposure to light are analogous to those produced in the skin.

A comparison of the light from different sources—from the blue sky to incandescent tungsten—shows a variable content of these rays, the amount existing in the electric arc and the tungsten lamp being excessive. These rays play an important part in the production of that train of symptoms or rather conditions going to make up what is known as snow blindness, and a similar affection of the eyes, found in those recently exposed to tropical light, as well as the electric ophthalmia of varying degree which is being encountered with increasing frequency and which is really taking a place among the occupational diseases.

The fact that several cases of asthenopia met with during the past two or three years were not relieved entirely by the proper fitting of glasses but were ultimately remedied by the use of methods to reduce the amount of invisible rays entering the eye is fairly conclusive evidence of their harmful effects.

2. OTOSCLEROSIS.

M. W. FREDRICKS.

Grouping of several disease conditions under the same name. The importance of an exacter pathology, and importance of making a differential diagnosis between otosclerosis and similar conditions. Difficulty of obtaining and preparing anatomical specimens. Great length of time necessary properly to observe a case. Importance of recognizing the disease early in life, when it might still be amenable to treatment. Frequency of the disease, and economic necessity of finding some effective treatment. Role of heredity. Small value of methods of treatment that have so far been employed. Radium of no value except to kill the acoustic In cases of intolerable head-noises. Other drugs tried, and their value. Mechanical methods. X-ray treatment.

3. NOT RECEIVED.

C. M. HOSMER.

TUESDAY AFTERNOON, 2 O'CLOCK.

PROGRAM OF THE UROLOGICAL SECTION OF THE CALIFORNIA STATE MEDICAL SOCIETY.

1. SOME DERMATOLOGICAL CASE REPORTS.

THOMAS J. CLARK.

Mycosis Fungoides.
Acute Lichen Planus in a Negro.
Lichen Infantum.
Leprosy in Children.
Herpes Gestationis.
Chancre of the Tonsil Originating in a Dentist's Office.
Pemphigus Neonatorum.

Discussion opened by HOWARD MORROW.

2. PYELITIS OF PREGNANCY.

A. B. CECIL.

3. ETIOLOGY AND TREATMENT OF FREQUENCY OF URINATION IN WOMEN.

W. E. STEVENS.

4. CHAIRMAN'S ADDRESS.

V. G. VECKI.

WEDNESDAY MORNING, 9:30 O'CLOCK.

Election of Officers.

1. DYSURIA IN THE TABETIC.

T. L. HOWARD.

2. REPORT OF A CASE OF EXFOLIATIVE MEMBRANOUS CYSTITIS.

GRANVILLE MACGOWAN.

The condition a rare one—cause unknown—no symptoms distinctly diagnostic—most common in women in the puerperal state—motor powers of bladder always interfered with for a long time—cystoscopic picture—treatment pursued.

3. AN ANALYTICAL STUDY OF 47 PERINEAL PROSTATECTOMIES.

FRANK HINMAN.

THURSDAY MORNING, 10 O'CLOCK.

MOVING PICTURES OF SUPRAPUBIC PROSTATECTOMY.

W. B. DAKIN.

WEDNESDAY MORNING, 9:30 O'CLOCK.

PROGRAM OF THE SECTION ON OBSTETRICS AND GYNECOLOGY OF THE CALIFORNIA STATE MEDICAL SOCIETY.

1. CARE OF FUNCTIONING BREASTS.

FRANK C. AINLEY.

General and local preparation, during pregnancy, for nursing the baby. Importance of toughening rather than hardening the nipples.

The importance of regular, periodic stimulation in establishing a sufficient milk supply, and the objections to the usual meddlesome methods.

Methods of maintaining or increasing the milk supply.

Treatment of breast infections.

The rapid, safe, comfortable method of drying up maternal milk supply.

Discussion opened by GEO. LYMAN.

2. OBSTETRICAL ANESTHESIA.

CAROLINE PALMER.

1. Necessity for "Painless Childbirth."
2. Consideration of the use of drugs in the various stages of labor.

3. Consideration of the use of chloroform, ether and nitrous oxide and oxygen as to:
   (a) Duration of labor.
   (b) Interference.
   (c) Hemorrhage.
   (d) Laceration.
   (e) Safety to mother and child.
4. Management of abnormal cases:
   (a) Prolonged labor.
   (b) Forceps.
   (c) Minor operations.
   (d) Hemorrhage.
   (e) Eclampsia.
   (f) Cesarian section.
5. Technic of administering nitrous oxide and oxygen in normal obstetrics.
6. Case reports.
7. Conclusions.
8. Expense.
9. A suggested routine procedure.
10. Cooperation between Obstetrician and Anesthetist.
11. Obstetrical Anesthesia worthy of serious consideration.
12. Records.

3. BACKWARD DISPLACEMENT OF THE UTERUS.

THOS. A. BURGER.

Recent literature on this subject has been so prolific that this paper will be, to some extent, rather a review of trustworthy findings, making such applications as seem pertinent.

Anatomic conditions, especially, will be dealt with while posture or the orthopedic considerations will be enlarged upon, quoting the writings of Sturmdorf, Dickenson and others along with Goff's ideas in regard to location of cervix, if anchored to the front, determining which way the fundus locates itself from the cervix as a pivot.

With intra-abdominal pressure as the most important of all factors influencing the position of the fundus, the above considerations become only governing elements.

Pelvic pathology and lack of pelvic floor are undisputed factors in retropositions, although many retroposed uteri are not to be classed as pathological; and congenital (?) retropositions are in this latter class.

With end results as the greatest consideration, the determination of cases of prolapsed uteri where surgery is not indicated is a master gynecological problem.

Treatment will be considered from the standpoint of posture, exercise, pessary and surgery, with brief reason for choice of each in selective cases.

4. EMPHYSEMA COMPLICATING LABOR WITH REPORT OF CASE.

DUDLEY SMITH.

A rare complication of labor. An emphysema of the mediastinum extending to the subcutaneous tissues of neck and head; less than a hundred cases in the literature. Radiographs of the chest tend to confirm the presumption that the condition was of tuberculous origin.

WEDNESDAY AFTERNOON, 2:30 O'CLOCK.

1. ELECTION OF OFFICERS.

2. VESICO-VAGINAL FISTULAE.

C. P. THOMAS.

Deals particularly with surgical causative factors, especially complicating hysterectomy and the Percy operation on cancer of the uterus.

Gives methods of differentiation between uretero and vesicovaginal fistulae. Also outlines methods of detecting the very small fistula.

Describes method of encouraging spontaneous cure, and prevention of fistulae where operations have injured the bladder walls.

Outlines primary and secondary operation for fistula, describing minutely the methods and suture material for both the primary and secondary operations.

Summary of the paper outlines the following requirements:

1. A good light and exposure of the opening. When the uterus has been removed, this latter is not always an easy matter.
2. Thorough denudation.
3. Careful coaptation without tension of the denuded surfaces.
4. Correct placing of the proper suture material.
5. Rest in bed three weeks, with a self-retaining catheter two weeks, which catheter must be kept clean.

Discussion opened by H. P. NEWMAN.

3. SYMPOSIUM ON CYSTOCELE.

(a) H. P. NEWMAN.
(b) J. CRAIG NEEL.

H. P. NEWMAN.

New Method of Plastic Surgery in Extensive Tears and Hernial Conditions of the Female Bladder and Urethra, With Report of Two Unusual Cases.

(Illustrated by lantern slides.)

Restoration of the female bladder in extensive tears with hernial conditions or in exstrophy of these organs, requires most painstaking, plastic surgery, especially in those cases where the urethra is involved or where some means of controlling the flow of urine must be devised. Individual methods must be adapted to individual cases and the operation itself as well as the after-treatment demands exact and discriminating care.

In the cases reported these considerations are exemplified and a contribution to the technique offered.

Discussion opened by GEO. B. SOMERS.

J. CRAIG NEEL.

Anterior Vaginal Relaxation With Especial Reference to Urinary Incontinence.

The importance of the urogenital triganum as a support for the pelvic viscera has not been sufficiently emphasized. While uterine prolapse may occur in nulliparous women, extensive anterior vaginal relaxation with marked cystocele is almost invariably due to injuries associated with child-birth.

That the development of cystocele is a gradual process and is due to a relaxation of the endopelvic fascia and not to a laceration as is generally supposed, is readily demonstrated at the time of operation since this fascia forms a strong layer of tissue between the original mucosa on one side and the bladder wall on the other.

The importance of having the bladder emptied to allow the head to enter the pelvis has long since been recognized. The neglect of this procedure not only prolongs the labor, but allows strong pressure to be put upon the anterior vaginal wall and thus, by overstretching the fibers, decreases the efficiency of this fascial diaphragm. When the fascial support is once damaged, the bladder descends to form a hernia, which is more commonly known as cystocele. If the internal urethral sphincter is sufficiently disturbed, urinary incontinence results which may not only be the most troublesome symptom, but at the same time may be the most difficult one to relieve.

The chief symptoms of anterior vaginal relaxation usually appear about the menopause and are: irritability of the bladder, pelvic tenesmus, and incontinence of urine, especially on slight exertion, and inability to empty the bladder.

The treatment is operative. When urinary incontinence is complained of, the best results are obtained by tightening the internal urethral sphincter after the method described by Kelly.

The treatment of the cystocele is similar to the treatment of hernia in other parts of the body. A transverse incision is made over the cervix extending through the vaginal mucosa and underlying fascia; the mucosa and fascia are then separated from the bladder from below upwards to the region of the internal urethral sphincter; a median incision is made through these layers which are dissected laterally to the pubic bones; the bladder is next reduced to its normal position; the fascia is separated from the mucosa and imbricated by mattress sutures; the excess of mucosa is then removed and the cut edges approximated by a continuous suture.

If the dissection is made in the proper layers, there is practically no bleeding and the results have been most satisfactory.

NOTE:—This paper will be illustrated by lantern slides, showing the pelvic fascia, and steps of the operation.

THURSDAY AFTERNOON, 2 O'CLOCK.

PROGRAM OF THE NEUROLOGICAL SECTION OF THE CALIFORNIA STATE MEDICAL SOCIETY.

1. SPINAL CORD CHANGES IN COMBINED SCLEROSIS.

WALTER SCHALLER.

Based on a consideration of the pathology in four cases of Combined Sclerosis microscopically examined, the cord symptoms of this disease are explained and the diagnosis of the condition discussed in a review of a number of additional cases seen clinically. Cord sections and certain clinical symptoms are illustrated by lantern slides.

Discussion opened by J. T. FISHER.

2. A DISCUSSION OF THE FAILURE OF ABDOMINAL SURGERY AND OTHER COMMON THERAPEUTIC AGENTS TO RELIEVE PAIN AND THE OTHER SYMPTOMS OF DISEASE OF THE VEGETATIVE NERVOUS SYSTEM.

T. J. ORBISON.

3. SYMPTOMATIC PSYCHOSES.

C. L. ALLEN.

4. STUDY AND CHARTING OF PERSONALITY.

V. H. PODSTATA.

The author seeks to systematize the study of Endow-

ments, Capacities and Traits of personality and to record them graphically by means of charts.

His first object is to aid in the early recognition of deviations towards abnormal reaction types, the second to establish more definitely the influence of heredity and acquired causes upon the molding of personality.

Various abnormal types of personality are presented by the author by means of his charts.

His studies have been made both on children and adults.

5. **REPORT OF A CASE OF AMAUROTIC FAMILY IDIOCY (TAYLOR SACHS DISEASE), THIRD CASE IN SAME FAMILY AFTER A LAPSE OF SIXTEEN YEARS.**

CARL W. RAND.

Reference to Warren Tay's original article (1881), with a quotation of his original descripton of the eye-grounds.

Reference to B. Sachs' pioneer work and the symptom-complex which he considered as pathognomic of the disease.

A few words regarding the clinical and pathological aspects of the disease. Complete lists of contributors to the subject, with bibliography attached at end of report.

Description of the author's case, together with a history of a similar illness in three preceding members of the same family. Physical findings on examination of patient; description of the ophthalmoscopic findings; laboratory reports.

Entire report will take 10 to 12 minutes to read.

Discussion opened by ROSS MOORE
J. MAST WOLFSOHN.

OFFICERS, 1916-17.

GEORGE H. KRESS, Los Angeles, President.
L. R. WILLSON, Fresno, First Vice-President.
JNO. C. YATES, San Diego, Second Vice-President.
SAXTON T. POPE, Butler Building, San Francisco, Secretary.

COUNCILORS.

Term expires 1917: E. N. EWER, Oakland, 7th District; A. W. HOISHOLT, Napa, 9th District; A. C. A. JAYET, San Jose, 5th District; RENÉ BINE, San Francisco, at large.

Term expires 1918: T. C. EDWARDS, Salinas, 3rd District; GEORGE H. AIKEN, Fresno, 4th District; H. A. L. RYFKOGEL, San Francisco, at large; C. VAN ZWALENBURG, Riverside, 1st District.

Term expires 1919: C. G. KENYON, San Francisco (Chairman), 6th District; E. C. MOORE, Los Angeles, 2d District; JAS. H. PARKINSON, Sacramento, 8th District; O. D. HAMLIN, Oakland, at large.

PERSONNEL OF THE HOUSE OF DELEGATES.

I. EX-OFFICIO.

The President, GEORGE H. KRESS.

II. COUNTY SOCIETY DELEGATES.

DELEGATES.	ALTERNATES.
Alameda.	
G. G. Reinle (1)	T. C. McCleave (1)
A. S. Kelly (1)	Alvin Powell (1)
E. E. Brinckerhoff (2)	W. A. Clark (2)
L. P. Adams (2)	Dudley Smith (2)
Butte.	
D. H. Moulton (1)	N. T. Enloe (1)
Contra Costa.	
P. C. Campbell (2)	W. S. Abbott (2)
Fresno.	
A. B. McConnell (1)	J. R. Walker (1)
J. H. Pettis (1)	
Glenn.	
Humboldt.	
John N. Chain (2)	Louis P. Dornis (2)
Imperial.	
Kern.	
F. A. Hamlin (1)	J. P. Hull (2)
T. F. Smith (1)	
F. J. Gundry (2)	
Lassen-Plumas.	
Los Angeles.	
A. B. Cooke (1)	Titian J. Coffey (1)
H. Bert Ellis (1)	O. O. Witherbee (1)
W. H. Kiger (1)	J. L. Pomeroy (1)
Wm. M. Lewis (1)	H. G. Marxmiller (1)
Chas. D. Lockwood (1)	Irving Bancroft (1)
Granville MacGowan (1)	A. F. Maisch (1)
Thos. J. McCoy (1)	Charles Phillips (1)
F. C. E. Mattison (1)	H. A. Rosenkranz (1)
F. M. Pottenger (1)	Francis L. Anton (1)
Albert Soiland (1)	William Wenzlick (1)
R. B. Sweet (1)	Joseph M. King (1)
C. P. Thomas	A. S. Granger (1)
(Los Angeles—Continued.)	
Chas. H. Whitman (1)	Ross Moore
Stanley P. Black (2)	F. A. Speik
Chas. C. Browning (2)	Edgar Allen
George A. Fielding (2)	Clarence Toland
Wm. R. Molony (2)	A. J. Herrmann
C. H. Montgomery (2)	
E. A. Newton (2)	
L. M. Powers (2)	
Harlan Shoemaker (2)	
V. R. Townsend (2)	
Thomas J. Orbison (2)	
William Duffield (1)	
F. W. Thomas (1)	
J. M. Wilson (1)	
H. M. Voorhees (2)	
Marin.	
J. H. Kuser (2)	W. F. Jones (2)
Mendocino.	
O. H. Beckman (1)	L. C. Gregory (1)
Merced.	
B. Davis (1)	J. L. Mudd (1)
Monterey.	
H. N. Yates	Garth Parker
Napa.	
Orange.	
C. D. Ball (1)	
H. A. Johnston (1)	
Placer.	
J. G. MacKay (1)	G. H. Fay (1)
Riverside.	
H. R. Martin (1)	
J. C. King (1)	
Sacramento.	
S. E. Simmons (1)	E. W. Twitchell (1)
T. J. Cox (1)	J. B. Harris (1)
F. F. Gundrum (1)	C. B. Jones (1)
San Benito.	
L. C. Hull (1)	

DELEGATES.	ALTERNATES.
San Bernardino.	
G. G. Moseley	D. C. Strong
San Diego.	
San Francisco.	
H. W. Allen (1)	T. Addison (1)
J. H. Barbat (1)	E. W. Alexander (1)
W. F. Blake (1)	W. Baldwin (1)
R. G. Brodrick (1)	G. M. Barrett (1)
J. B. Frankheimer (1)	S. Beasley (1)
Herbert Gunn (1)	S. Blum (1)
W. W. Kerr (1)	W. W. Boardman (1)
C. G. Levison (1)	Jos. R. Brown (1)
A. A. O'Neill (1)	E. D. Chipman (1)
W. Ophuls (1)	E. C. Dickson (1)
S. Stillman (1)	Jas. Eaves (1)
C. F. Welty (1)	F. R. Girard (1)
H. E. Alderson (2)	A. W. Hewlett (1)
P. K. Brown (2)	V. H. Hulen (1)
F. B. Carpenter (2)	W. P. Lucas (1)
W. B. Coffey (2)	G. D. Lyman (1)
G. E. Ebright (2)	F. W. Lynch (1)
H. W. Gibbons (2)	L. S. Mace (1)
J. H. Graves (2)	M. Molony (1)
H. C. Moffitt (2)	J. H. O'Connor (1)
E. Rixford (2)	C. A. Pauson (1)
A. B. Spalding (2)	C. J. Teass (1)
F. D. Tait (2)	J. T. Watkins (1)
V. G. Vecki (2)	F. H. Zinnwalt (1)
San Joaquin.	
J. D. Dameron	L. Dozier (1)
C. R. Harry (2)	D. R. Powell (1)
B. J. Powell (2)	W. J. Young (1)
San Luis Obispo.	
A. H. Wilmar (1)	G. L. Sobey (1)
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Santa Barbara.	
W. H. Campbell (2)	C. S. Stevens (2)
Santa Clara.	
Chas. M. Richards (1)	
N. H. Bullock (1)	
Paul Sanford (2)	
Santa Cruz.	
P. T. Phillips (1)	F. H. Koepke (1)
Shasta.	
F. Stabel (1)	E. Dozier (1)
C. E. Reed (1)	J. P. Sandholdt (1)
Siskiyou.	
Solano.	
Sonoma.	
Frank E. Sohler (1)	J. W. Seawell (2)
F. O. Pryor (2)	J. T. O'Brien (2)
Stanislaus.	
P. N. Jacobson (2)	B. F. Surrhyne (2)
Tehama.	
Tulare.	
W. W. Tourtillott (2)	T. D. Blodgett (2)
Tuolumne.	
Ventura.	
Yolo.	
H. D. Lawhead (1)	M. W. Ward (1)
Yuba-Sutter.	

Society Reports

CONTRA COSTA COUNTY.

The regular monthly meeting of the Contra Costa County Medical Society was held in the Abbott Emergency Hospital, Richmond, on Saturday evening, February 24, at which time Dr. P. C. Campbell, President of the Society, was elected delegate to the State convention at Coronado. Dr. U. S. Abbott, Secretary of the Society, was elected alternate.

Dr. Edwin E. Johnson of Concord, Dr. M. Deininger-Keser of Richmond, Dr. W. W. Fraser of Richmond, and Dr. Hall Vestal of Richmond were elected to membership, making a total membership for 1917 of twenty-five.

After the business meeting Dr. H. D'Arcy Power of San Francisco gave a very interesting and instructive talk on "Importance and Methods of Diagnosis."

There was a lively discussion among the members regarding the different medical health laws about to be passed by the Legislature.

Those present at the meeting were: Drs. P. C. Campbell, H. L. Carpenter, E. W. Cunningham, C. L. Abbott, F. S. Cook, Edwin E. Johnson, Hall Vestal, M. Deininger-Keser, W. W. Frazer, E. W. O'Brien and T. A. Guthrie (dentists).

At the close of the meeting a Dutch luncheon was served.

Regular monthly meetings are held on the fourth Saturday nights of each month.

U. S. ABBOTT, Secretary.

LOS ANGELES COUNTY MEDICAL ASSOCIATION.

The annual meeting of the Eye and Ear Section, Los Angeles County Medical Association, was held at the offices of Drs. Fleming, Hastings, and Montgomery, 924 Trust and Savings Building, Los Angeles, Cal., January 8, 1917.

Attendance—Drs. Bullard, Dudley, Detling, Griffith, Hastings, Kyle, Lund, R. W. Miller, McKellar, Montgomery, Oldham, Old, F. L. Rogers, Stivers, Sweet, True, Kelsey.

Visitors—Drs. Sleeper and Jesberg.

Minutes of the previous meeting read and approved.

The annual report of the Secretary and Treasurer was read and Dr. True moved that Dr. McKellar be allowed to pay his dues. Seconded by Dr. Bullard. Dr. Hastings moved that the Secretary and Treasurer's report be accepted. Seconded by Dr. Bullard and carried.

The Nominating Committee suggested the names of Dr. George W. McCoy (chairman), Dr. Frank Detling (vice-chairman), Dr. C. G. Stivers (secretary-treasurer) and Dr. C. H. Montgomery (councillor).

Dr. Hastings moved the nominations be closed. Seconded by Dr. Bullard.

Dr. R. W. Miller moved that the Secretary cast a ballot for the candidates. Seconded by Dr. Bullard. Accordingly the secretary cast one ballot and Dr. George W. McCoy as chairman, Dr. Frank Detling as vice-chairman, Dr. C. G. Stivers secretary-treasurer and Dr. C. H. Montgomery as councillor were declared elected.

Dr. Hastings suggested that the Secretary mail to each member some printed cards for reporting all cases of deaths.

Roll call.

Dr. Dudley reported two cases. Dr. Griffith one case. Dr. R. W. Miller two cases, both mastoids, intra-cranial, and meningitis and saw third case in consultation. Case of purulent meningitis following tonsillectomy. Dr. Montgomery four cases.

Discussion (first case) Dr. G. Lund: Could not the infection have occurred from some other source than family physician's manipulation?

Dr. Montgomery: Perhaps, but not likely.

Second case of Vincent's angina. Third case of meningitis. Fourth case of mastoid.

Discussion (fourth case): How was the speech?

Answer: That is hard to answer, but I think it was normal. She answered her parents in monosyllables.

Dr. Rogers of Long Beach: Was the ventricle open?

Answer: No.

Dr. Miller: Was there any specific infection?

Answer: No.

Dr. Kyle: Patient seemed to show some symptoms of cerebellar abscess.

The Secretary requested all members to pay their dues by check.

Dr. Dudley moved to adjourn and to continue reports at the next meeting.

The regular meeting of the Eye and Ear Section of the Los Angeles County Medical Association was held at the offices of Drs. H. B. Ellis and George H. Kress, 245 Bradbury Building, Los Angeles, Cal., February 5, 1917.

Attendance—Drs. Brown, Dudley, Detling, Ellis, Graham, Leffler, Lund, F. W. Miller, R. W. Miller, Oldham, Old, Stivers, Sweet, True.

Visitors—Drs. Sleeper, Jesberg, McKellar, Duncan.

Minutes of the annual meeting read and approved.

On roll call Dr. Stivers reported a fatal case of tuberculosis of the larynx. Dr. Sweet reported case of Sarcoma of tonsil in which Autolysin was used. Patient was 58 years of age; both tonsils were Sarcomatous.

Dr. Brown reported the following cases: First, mastoid; second, brain abscess; third, nasal hemorrhage; fourth, frontal sinus; fifth, mastoid.

Dr. Detling reported a mastoid case, the man was a diabetic had Betzold type abscess. The mastoid wound did not heal well, temperature fluctuated. After death the mastoid opened, lateral sinus exposed containing purulent clot. Temperature was not characteristic of sinus infection.

Question (Dr. True): Cause of nasal hemorrhage?

Answer (Dr. Brown): Rupture of hardened artery.

Dr. R. W. Miller reported two cases both mastoids.

The Secretary read the application of Dr. J. H. McKellar. Dr. Dudley moved that the section recommend the application of Dr. McKellar without further action. Dr. Ellis moved the by-laws be suspended in Dr. McKellar's case. Seconded by Dr. True. Carried.

On the original motion of Dr. Dudley the section voted to recommend Dr. McKellar's application.

Dr. Rex Duncan read his paper, "The Use of Radium in Diseases of the Eye, Ear, Nose and Throat." Illustrated with lantern slides.

After free discussion the meeting adjourned.

C. G. STIVERS, Secretary.

SACRAMENTO SOCIETY.

The regular monthly meeting of the Sacramento Society for Medical Improvement was held February 20, 1917, at the Hotel Sacramento, the President, Dr. C. B. Jones, presiding. The following program was presented:

1. The Aim of St. Luke's Group Study and Its Methods. Illustrated by lantern slides. Dr. F. W. Birtch, San Francisco.
2. A Discussion of the Urologic Cases from the Diagnostic Section. Material from 300 cases. Dr. H. Partridge, San Fracisco.
3. The Interpretation of the Phenolsulphonephthalein Test. Material from 300 cases. Dr. R. B. Tupper, San Francisco.
4. A Discussion of the Neurological Findings Discovered by Routine Examination in Three Hundred Cases. Dr. T. G. Inman, San Francisco.

Discussion of the papers was opened by Dr. E. V. Knapp of San Francisco, followed by Dr. E. T. Rulison, Dr. N. G. Hale, Dr. J. W. Crawford, Dr. F. F. Gundrum, Dr. E. H. Pitts. Discussion closed by Dr. Birtch and Dr. Partridge.

Dr. A. D. Elsworth was elected to membership.

Monthly report of the Board of Directors read.

Meeting adjourned at 11:30 p. m.

W. A. BEATTIE, Secretary.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of February, 1917, the following meetings were held:

Tuesday, February 6—Section on Medicine.

Symposium of Group Study by Members of St. Luke's Diagnostic Section.

1. The Aim of Group Study and Its Methods Illustrated. E. V. Knapp.
2. The Handicap Found in the Tuberculous Cases Due to Concomitant Diseases (From 300 cases investigated). R. L. Ochsner.
3. The Explanation of Dyspeptic Symptoms (From the records of the Diagnostic Section). Wm. Kenney.
4. Discussion of the Orthopedic Cases Noted by Routine Examination in Group Study. G. J. McChesney.

Tuesday, February 13—General Meeting.

1. Etiology and Treatment of Cystocele. J. C. Neel.
2. Some Observations on Bacillus Dysenteriae in California. K. F. Meyer.
3. The Colloidal Gold (Lange) Test in Diagnosis. R. W. Harvey.

Tuesday, February 20—Section on Surgery.

1. Study of Exophthalmic Goiter of Various Types; Presentation of Cases. C. G. Levison.
2. The Chemistry of the Thyroid Gland. Alice Rhode.

Tuesday, February 27—Section on Eye, Ear, Nose and Throat.

1. Presentation of Eye Cases.
   W. F. Blake:
   (a) Keratoconus.
   (b) Marked arteriosclerosis with horizontal hemianopsia.
   (c) Hemorrhage in left eye; possibly tuberculous.
   (d) Piece of metal nearly 1 cm. in diameter and 3 mm. thick extracted from eye.
   (e) Separation of retina.
   (f) Two cases of vitreous opacities in individuals suspected of being tuberculous.
   (g) Proptosis; mild degree of oxycephaly.
   E. F. Glaser:
   (a) Keratoconus.
   (b) Albinism.
   W. S. Franklin:
   Lateral luxation of lens.
2. Brief Sketch of Recent Work in the Neuro-otological Field. F. C. Lewitt.
3. Report of Two Cases of Foreign Bodies in Bronchus. Saxton Pope.
4. Problem of Advanced Strictures of the Esophagus. Henry Horn.

REPORT OF THE COMMITTEE ON COMPULSORY HEALTH INSURANCE OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Following is the report of the Committee on Health Insurance of the San Francisco County Medical Society. The report has not yet been presented to the Society, but is herewith published because of the great interest in the question.

The proponents of compulsory health insurance have not, as yet presented any plan that your committee can endorse. It is certain, moreover, that the need of such legislation is less urgent in California than in many other States, and that for this reason California can well afford to delay such legislation until it effects in other states have been observed and studied.

The proposed legislation is of vital interest to the medical profession. About two-thirds of the total population would probably be insured against illness; and the supervision of and remuneration for this vast amount of medical service would be controlled by the state. Such a radical alteration in the conditions surrounding medical service can not be accomplished without conflicts between the state authorities and the insurance carriers on

the one hand, and the medical profession on the other; and conflicts between these two forces have occurred in almost every country where compulsory health insurance has been adopted. It is therefore imperative that the medical profession study carefully the problems that may arise, in order that it may guard its interests should such legislation be proposed or adopted.

The proposed plans guarantee two types of benefit to the insured in the event of illness. First, a cash benefit amounting to a certain proportion of his previous income; and second, medical care, which includes the services of a physician or of physicians, drugs, mechanical appliances and, if need be, hospital care. Your committee is unable to suggest any method whereby insurance carriers can furnish medical care without serious objections on the part of many physicians. In the first place, it is not certain that the total sum received by the profession under the proposed change would equal that which it now receives from the same classes of patients. Even though we assume for the sake of argument that the total sum will equal or will even exceed what is now received, it will be distributed differently, for the new distribution will be more or less controlled by the state and by the insurance carriers. The transition to this new set of conditions would undoubtedly work a hardship to many in the profession. It may be argued that under state control the selection of physicians would be more just than under the system of absolutely free choice now in force. This might be true under ideal conditions of governmental control; but the experiences of the past, particularly with respect to medical licensure, antivivisection laws, and industrial accident insurance, does not inspire the profession with confidence in the state control of medicine. Should at some time this control fall into the hands of those out of sympathy with the profession or should it be used for the promotion of political purposes, then a large part of the profession would find itself at the mercy of an unjust or corrupt central control. And in the end such a condition could not fail to lessen the standard of medical service rendered to the community as a whole.

Your committee therefore feels that from the standpoint of the medical profession it can endorse compulsory health insurance only in so far as it provides a cash benefit for the insured in the event of illness. If medical care were not provided this cash benefit could be greater than it would be otherwise. Under such a plan the patient would receive a cash benefit but the relations between patients and their physicians would remain as they now are. The committee realizes that this plan will not satisfy many who are at present advocating compulsory health insurance, for the reason that under this plan the sick benefits would often be insufficient to meet the expenses of illness. Nevertheless, the committee believes that the medical profession would prefer to follow its present custom of minimal charges in such cases rather than risk the uncertainties of state control together with an alteration in the personal relation that now exists between physician and patient.

Book Reviews

Clinical and Laboratory Technic. By H. T. McNeil. Illustrated. St. Louis: Mosby. 1916.

This little volume is the lamentable result of attempting too great a condensation of technical methods. It is a mere smattering and enumeration of the tests and methods employed rather than a description and interpretation. This book is so close to the quiz-compend type that it cannot be recommended as of the slightest practical value.

G. H. T.

Care of Patients Undergoing Gynecologic and Abdominal Procedures, Before, During, and After Operation. By E. E. Montgomery, M. D., Professor of Gynecology in Jefferson Medical College, Philadelphia. 12mo of 149 pages with 61 illustrations. Philadelphia and London: W. B. Saunders Company. 1916. Cloth, $1.25 net.

This little book is the outgrowth, the author says, of some typewritten instructions prepared for his assistants. It consists of a chapter on preparations for laparotomy and a discussion of possible complications, and following, of short descriptions of the technique of the various gynecological and of a few other abdominal operations. The explanations are short, but should be sufficient for nurses assisting in the operating room; they are entirely sensible, and no nurse will go amiss in following them.

L. E.

Cancer, Its Cause and Treatment. By L. Duncan Bulkley, A. M., M. D. New York: Paul B. Hoeber. 1915. Price, $1.50.

In this book Bulkley seeks to develop the theory that cancer is a constitutional disease whose incidence seems to follow closely along the lines of modern civilization. He thinks that this extension of cancer depends largely upon the altered conditions of life, particularly upon self-indulgence in eating, drinking and indolence. He considers the increase in the consumption of meat, alcohol and coffee, together with the increased nerve-strain, acting through a disturbance of metabolism as well as directly on the morbid cell itself to be of importance. He thinks that the institution of dietetic, hygienic and medicinal measures may offer some curative and much prophylactic promise.

L. E.

An Inquiry into the Principles of Treatment of Broken Limbs: a Philosophico-Surgical Essay with Surgical Notes. By William F. Fluhrer M. D. New York: Rebman Co. 1916.

This high-sounding title designates an essay advocating the treatment of fractures of the lower extremity by means of a fixation apparatus made of tin strips and plaster of paris bandages. The method was evolved in the '70's—and the book belongs to the '70's. Many of its principles are incorrect, but the treatise gives a number of useful hints in bandaging—a heritage from the days when bandaging was an art, and a slovenly dressing an opprobrium. Besides the essay on fractures it contains a chapter on the open treatment of amputations that is full of good suggestions, notes on sepsis in the New York hospitals in the '70's, and a chapter describing some bone instruments of the author's invention. The book is smothered in philosophical verbiage, but is interesting historically.

L. E.

The Practical Medicine Series. Comprising ten volumes on the year's progress in medicine and surgery. Under the general editorial charge of Chas. L. Mix, A. M., M. D. Chicago: Yearbook publishers. 1916.

Obstetrics. Vol. 7. Edited by J. B. DeLee and H. M. Stowe. Price, $1.35. Contents: Pregnancy. Labor. Puerperium. New-born. Obstetrics in general.

Materia Medica and Therapeutics. Preventive Medicine. Vol. 8. Edited by Geo. F. Butler and W. A. Evans. Price, $1.50. Contents: Drugs, extracts of animal organs, bacterial preparations, serums and vaccines. Electricity, Roentgen rays, radium and radio-active substances. Physician and public health work. General sanitation. Personal hygiene. Infant welfare. Inspection of school

children. Infectious and contagious diseases. Occupational diseases. Military hygiene.

Skin and Venereal Diseases. Vol. 9. Edited by O. S. Ormsby and J. H. Mitchell. Price, $1.35. Contents: Dermatosis, Genito-urinary Diseases, Syphilis.

Nervous and Mental Diseases. Vol. 10. Edited by H. T. Patrick, P. Bassoe and L. J. Pollock. Price, $1.35. Contents: Symptomatology. Neuroses. Cerebrospinal fluid and diseases of the meninges. Syphilitic diseases of nervous system. Diseases of the brain. Diseases of the spinal cord. Diseases of peripheral nerves. Miscellaneous. Psychiatry: general considerations. Alcoholism, etc. L. M.

Bone-Graft Surgery. By Fred H. Albee, M. D., F. A. C. S., Professor of Orthopedic Surgery at the New York Post-Graduate Medical School and the University of Vermont. Octavo volume of 417 pages with 332 illustrations, three of them in colors. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $6.00 net; half morocco, $7.50 net.

We would advise those of our readers who practice bone surgery, either as orthopedists or as part of a broader specialty, to make themselves acquainted with the contents of this book.

The author attempts to apply the autogenous bone inlay to very nearly every problem presented by bone surgery; and in doing so displays mechanical ingenuity and an often truly exquisite technic. However, every now and then he offers solutions to some problems which might be come at by some technically simpler means.

We do not expect to follow him in all that he proposes; nevertheless the principle of the autogenous bone-graft is essentially sound, and must be regarded as a permanent addition to bone surgery.

Dr. Albee's great service to the profession lies in the fact that he has worked out the technic, assembled the proper armamentarium, determined many of the indications for the operation where it is applicable, and by his writings may be said to have popularized the autogenous bone-graft.

The chapter on the operative treatment of fractures is alone worth the price of the book.

J. T. W.

The Surgical Clinics of Chicago, Volume 1 No. 1 (February, 1917). Octavo of 221 pages, 83 illustrations. Philadelphia and London: W. B. Saunders Company. 1917. Published bi-monthly. Price per year: Paper, $10; cloth, $14.

Clinic of Dr. A. D. Bevan:

Gall-stone disease.

General principles of the operative cure of inguinal, femoral, and diaphragmatic hernias. Demonstration of three cases.

Clinic of Dr. A. J. Ochsner:

Goiter.

Case of femoral hernia.

Gernias in children.

Clinic of Dr. E. W. Andrews:

Fracture of patella treated by open operation.

Three cases of plastic surgery.

Contribution by Dr. L. L. McArthur:

Improvement in the technic of gastric surgery.

Clinic of Dr. D. D. Lewis:

Neurolysis and nerve suture.

Bleeding nipple, with plastic operation upon breast.

Congenital pyloric stenosis.

Clinic of Dr. Carl Beck:

Open wound treatment of acute and chronic bone and joint infections.

New treatment of large cavities after empyema of the chest.

Clinic of Dr. Allen B. Kanavel:

Transplantation of fascia lata in exstrophy of the bladder, complete defects in abdominal wall and spina bifida.

Clinic of Dr. D. N. Eisendrath:

Head injuries.

Carcinomatous ulcer on posterior wall of stomach with perforation into lesser peritoneal cavity.

Clinic of Dr. Kellogg Speed:

Tendoplasty for wrist-drop. Description of new operation.

Clinic of Dr. Samuel C. Plummer:

Case of calculous anuria.

Clinic of Dr. Edwin W. Ryerson:

Ankylosis of elbow.

Clinic of Dr. D. B. Phemister:

Echinococcus cyst of liver complicated later by subphrenic pyopneumothorax and hydropneuthorax.

Central fibroma of mandible.

Manual of Therapeutic Exercise and Massage: Designed for the use of physicians, students and masseurs. By C. Hermann Bucholz, M. D. Illustrated with 89 engravings. Philadelphia and New York: Lea & Febiger. 1917. Price, $3.25.

In these days when the irregular practice of psychotherapy flourishes under the guise of isms, cults and pseudo religions, it behooves the medical man to analyze his deficiencies and attempt to remedy as many of them as possible. The more reason for this, because many of these methods of relieving the sick rest on sound medical or surgical basis and are the more potent in the charlatans' hands for this very reason. How many medical men can say that they can or do intelligently make use of hydrotherapy, electrotherapy, massage, gymnastics? Not many. We are too prone to allow these valuable therapeutic measures to become the special province of a very few medical enthusiasts or to be lost to the field of legitimate medicine by their misuse or abuse in the hands of the quacks and cultists.

In the medical schools, therapy, aside from sera, drugs and surgical procedures is hardly ever referred to, much less taught. It is only when the student goes out into practice that he becomes aware of the additions that he can make to his armamentarium, but it is usually too late for him to take up any of these things beyond a mere recognition of them and a very few of their possibilities.

There is undoubtedly some virtue to the mechanical side of osteopathy, chiropractic and the other man-handling systems beyond the psychic effect on the patient. Massage, as used by the Japanese, the Indians and as developed and used in the Swedish practice are all recognized and legitimate means of therapeutic treatment. It devolves upon the practitioner of medicine of the regular school to investigate these things and to employ that which he may find good.

Rarely there appears an authentic work from a reliable source on hydrotherapy, electrotherapy and the mechanotherapeutic measures. When such appears, we should avail ourselves of their lessons, so that we can have knowledge of new and additional ways to treat patients and that we may apply, in a scientific way, to our patients those kinds of treatment that will be of use as supplements or as substitutes for other more familiar forms of treatment.

With the above points in mind, it gives the reviewer great pleasure to introduce to the notice of the profession a most authentic, comprehensive and illuminating work from the pen of one who can speak authoritatively on the subject of exercise and massage.

The ground covered includes all the various types of massage, active and passive movements, treatment with hot-air apparatus, heliotherapy, hydrotherapy, and the Bier method of hyperemia. After a complete and remarkably clear discussion of these therapeutic means, the various applications of these remedies and a good exposition of the pathology of the various affections treated are

presented to the reader in a concise, yet thorough manner. The conditions studied at length comprise: Stiffness of joints, fractures and dislocations, arthritis, subacrominal bursitis, lumbo-sacral and sacro-iliac affections, faulty posture, lateral curvature affections of the foot, paralyses and ataxia, painful affections, neuroses, affections of the circulatory organs, respiratory organs, abdominal organs, and treatment of constitutional diseases and convalescence and debility. There is not a chapter where the reader cannot pick up one or more of those practical points that render the medical man's services more grateful to his patient and, therefore, the more satisfactory to himself. The illustrations are particularly fine photographs, admirably supplementing the text. G. H. T.

THE MARCH MEETING OF THE STATE BOARD OF HEALTH.

The regular monthly meeting of the State Board of Health was held in Sacramento on March 3, 1917. The following members were present: Drs. George E. Ebright, president; Fred F. Gundrum, Edward F. Glaser, Adelaide Brown, Robert A. Peers, and Wilbur A. Sawyer.

The Board endorsed Senate Bill No. 599 providing for physical education in the schools.

The typhus fever regulations for railroads, effective October 7, 1916, for detention camps for newly arrived Mexican laborers and for the weekly delousing of all section camps employing Mexican peons, were abolished as these precautions were no longer needed. The government had increased the precautions at the Mexican border and the disease had apparently been checked in California.

The action of the secretary in placing Siskiyou County under quarantine for rabies on February 23, 1917, was approved.

The following rule relative to the segregation and transportation of lepers was adopted:

No leper shall be transported, or encouraged to go from one county to another, or to a foreign country, without previous permission being obtained from the State Board of Health; and the escape of any leper from the isolation provided in accordance with Section 2952 of the Political Code shall be reported at once to the State Board of Health.

The resignation of Dr. J. C. Geiger, Assistant Director of the Bureau of Communicable Diseases, was received and accepted to take effect on April 24, 1917, as requested by him.

Fifteen additional beds in the men's ward of the tuberculosis department of the San Francisco Hospital, having been inspected and found to meet the requirements of the Board, were placed on the eligible list to receive the State tuberculosis subsidy.

Announcement was made that the statute providing for the payment of the State tuberculosis subsidy had been upheld as constitutional by the Third District Court of Appeal in its decision handed down March 1, 1917, in the test case of the County of Sacramento versus John S. Chambers, Controller.

Two nurses were granted certificates as registered nurses through reciprocity. A special committee of examiners was appointed for the examination of certification as registered nurse to be held April 18 and 19, 1917.

Miss Anna C. Jammé, Director of the Bureau of Registration of Nurses, was delegated to represent the Board at the annual meeting of the American Nurses' Association in Philadelphia, April 25 to May 3, 1917.

Thirty-four Nurses' Training Schools were placed on the list of accredited schools.

A temporary appointment as special investigator in the Bureau of Tuberculosis was authorized for the purpose of studying the prevalence of tuberculosis in certain industries.

Permits to supply water for domestic purposes were granted to the Bakersfield Water Company, and the North Sacramento Light and Water Company. A temporary permit was granted to the City of Pasadena to continue to dispose of sludge from its septic tank into the San Gabriel Wash.

After a hearing the Board granted a temporary permit to the City of Stockton to discharge sewage into the San Joaquin River after screening through half-inch mesh screen and chlorinating the effluent.

A committee of three was appointed to view the seven moving pictures on baby hygiene prepared under the direction of the California Collegiate Alumnae and was given power to endorse them in the name of the Board.

Licenses were granted to three cold storage warehouses.

One hundred and forty citations had been sent out for violation of the pure food and drug laws. Hearings were held in all cases on which the accused appeared in person or through a representative. Many of the cases were referred to district attorneys for prosecution.

WILBUR A. SAWYER, Secretary.

DEPARTMENT OF BACTERIOLOGY AND PATHOLOGY.

Edited by BENJAMIN JABLONS, M. D.

[This department has as its chief object the dissemination of the special knowledge that is being developed in the scientific laboratories of the world, and which are of practical interest to the medical practitioner. Abstracts of general articles will be published from time to time as well as preliminary reports of subjects that are of universal interest.]

JOURNAL OF EXPERIMENTAL MEDICINE. MARCH, 1917.

Paul A. Lewis has carried out a most interesting series of experiments relative to the inhibitory effect of a certain group of dyes on the growth of tubercle bacillus, as compared with its effect on Bacillus typhosus. His results are very interesting in view of the more recent experiments relative to the disinfectant action of the aniline dyes. While most chemical compounds have inhibitory or even bactericidal effect on various types of micro-organisms, they have not manifested the same effect in vivo, with the exception of Optochin (Ethyl hydrocuprein), which has a decided effect on pneumococcus septicemias in animals. He has found in a study of 264 different dyes which fall into several groups that those belonging to the azo-dye group possess the power of inhibiting the growth of tubercle bacilli up to very high dilutions. Of these groups, Aurantia (Grübler) and Heliotrop will inhibit the growth of the tubercle bacillus up to a dilution of 1-4,000,000 while the typhoid bacillus is inhibited up to a dilution of 1-1,000 for aurantia and 1-8,000 for heliotrop. Further investigations along this line might be of great value in experiments carried out with the object of disinfecting or limiting the growth of the tubercle bacillus in processes associated with its active proliferation.

JOURNAL OF MEDICAL RESEARCH. SEPTEMBER, 1916.

A. A. Krause has studied the factors underlying the presence and significance of the Von Pirquet test and has come to the conclusion that,

1. Cutaneous hypersensitiveness to tuberculoprotein is inaugurated by the establishment of infection and the development of the initial focus.
2. It increases with progressive disease.
3. It varies directly with the extent and intensity of the disease.
4. It diminishes with the healing of the disease.
5. It is probably never entirely lost (except in the presence of intercurrent disease, pregnancy, etc.)

6. It is increased by re-infection.

7. It is diminished or completely wiped out during the period of the general tuberculin reaction.

The possibility of tissue hypersensitiveness being a function of immunity is not to be discarded.

The general impression obtained from the extensive experiments carried out on an unusually large number of guinea pigs with a virulent and an avirulent strain of tubercle bacillus is that the hypersensitiveness of the skin is of a low grade following infection and that the hypersensitiveness rapidly rises if there is a fresh infection. Should the disease subside and the individual recover, the hypersensitiveness would fall gradually to a lower level. Should the disease remain active the high level of hypersensitiveness would persist and last until the body is overwhelmed and its resistance broken down completely by disease when hypersensitiveness disappears.

Anaphylaxis and Tuberculosis. Krause has been able to determine the following facts in an experimental study of the effect of anaphylaxis on the resistance to infection by the tubercle bacillus and to the extension of tuberculous disease:

1. Anaphylactic shock in guinea pigs experienced a short time before infection with tubercle bacilli does not reduce their resistance to such an extent that the virulence of the organism is in any way markedly increased, although the extent of the disease seemed slightly increased.

2. After tuberculosis is once established a single attack of anaphylaxis does not bring about conditions that favor the extension of the disease.

3. Anaphylactic shock suffered before the inoculation of a non-pathogenic acid fast organism does not lay open the body to progressive invasion by this germ.

4. Efforts to enhance the virulence of a germ by previous sensitization of from five to fifteen days proved fruitless, thereby failing to confirm previous experiments of Thiele and Embleton.

5. Inoculation experiments proved that the tubercle bacillus could preserve its viability and original virulence after being kept in a dried state for as long a time as fifteen to seventeen months.

Immunity to Tuberculosis. The General Tuberculin Reaction. A. A. Krause considers the general reaction occurring after the administration of tuberculin as due to a change in the circulatory factors which permit of the sudden entrance of tissue products into the general circulation. He found that the tissue products of tuberculous foci were not more toxic than normal tissue products, that filtration through Berkefeld filters, paper or cotton would hold back these poisonous tissue products and that drying the filter residue would render these substances non-toxic. He concludes that an extract of an animal's own normal tissue is toxic if introduced rapidly into its circulation and that the products of tuberculous foci are primarily toxic. The general reaction according to Krause is due to the rapid absorption of the toxic products of the tuberculous focus brought about by the changed circulatory factors following the focal reaction around the tuberculous focus.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, MARCH 3 and 10, 1917.

Natural and Acquired Resistance to Tuberculosis and Bearing on Preventive Measures.

Theobold Smith discusses the parasitic cycle of the tubercle bacillus from the point of view of adaptation of the tubercle bacillus to the changed environment it is confronted with from the time it gains entrance to the human host to the time that it repeats its cycle in another human host. He considers that the fact has been lost sight of that the bacillus must change its character to meet the different conditions that it is exposed to. These vary from the deleterious effects of an extrahuman existence to that of life within the human where it is subject to tissue and blood serum immunity. Baumgarten, Weigert and Von Pirquet have always favored the view that the tubercle bacilli always produced lesions at the portal of entry. On the basis of numerous observations on humans and cattle, Smith has come to the conclusion that the tubercle bacilli have a predilection for lymph node tissue, but are not retained there. They gain entrance into the lung tissue where, after multiplication and destruction of the lung tissue they pass out to repeat their cycle. The three types of bacilli are chiefly, the human, bovine and avian types. He considers that these are derived from a common ancestor, but the transformation that has taken place has sufficiently modified these strains so that transmutation from one type to another has never been effected. The Bovine Tubercle Bacillus type of disease affects principally the lymph nodes of the neck and the mesentery, and in general is to be considered a food disease capable of being stamped out by adequate hygienic and relatively simple measures.

The other form of the disease most prevalent in the human race is that type known as Phthisis, in which the infecting agent enters and leaves by the same route. The two aberrations are the primary lymph node disease and the hemotogenous infections of other organs. It often happens that the primary lymph node disease is not overstepped and that by hygienic measures the primary infection may be controlled. It is wise to consider the generalized infection as the disease, in order to be able to see the comparison between this and other acute infectious disease.

The type of the disease manifested is affected by dosage of the virus, variations in virulence, racial character of the host, rib pressure, lung ventilation, occupation, and especially by intercurrent diseases such as measles, whooping cough and pneumonia. Severe physical exertion, such as labor with its attendant exertion, are important factors in the production of disseminated tuberculous foci.

The relation of the tubercle bacillus to the tissues of the host seem to be confined chiefly to the endothelial cells, for it is here that the bacilli seem to multiply. It is from these cells that they creep from place to place by way of the blood or the lymph stream. Suppression or destruction of the bacillus takes place in any one of these areas. The caseation that takes place is due to the unsaturated fatty acid soaps of the bacillus which act antitryptically and inhibit the action of the leucocytic ferments. The exudative or proliferated tendency of the tubercle bacilli depends entirely on the virulence, number and their secretory and excretory activity. In the tubercle which is the most frequent product of reaction associated with the bacillus the endothelial like cells seem chiefly involved while the polynuclear leucocytes do not appear.

Agglutinins and precipitins are supposed to be constant in spontaneous tuberculosis but do appear in the experimental disease. Opsonins are either slightly reduced or fluctuating. Complement fixing bodies appear after the injection of living and dead bacilli. They are not present in the blood of non-tubercular individuals but are encountered in from 6 to 8% of tuberculous individuals. Polymorphonuclear leucocytes appear generally with lesions associated with the exterior so that it is difficult to discard the possibility of secondary infection with other organisms.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

(Devoted to the advancement of Pharmacy and its allied branches; to the work of the Council on Pharmacy and Chemistry of the American Medical Association, and to matters of interest bearing upon the therapeutic agents offered to the medical profession. The editor will gladly supply available information on matters coming within the scope of this Department.)

Tabellae Dulces Aristochin (Western), 1 gr.—Each tablet contains aristochin 1 grain with cocoa, sugar and saccharine as vehicles.

Tabellae Dulces Heroin 1/100 gr.—Each tablet contains heroin 1/100 gr. with cocoa, sugar and saccharine as vehicles.

Tabellae Dulces Novaspirin (Western), ¼ gr.—Each tablet contains novaspirin ¼ grain with sugar, starch, liquid petrolatum, saccharine, curcuma and oil of lemon as vehicles.

Tabellae Dulces Tannalbin (Western), 1 gr.—Each tablet contains tannalbin 1 grain with cocoa, sugar and saccharine as vehicles.

Tabellae Dulces Terpin Hydrate with Heroin (Western), 1/100 gr.—Each tablet contains terpin hydrate ½ grain, and heroin 1/100 grain, with cocoa, sugar and saccharine as vehicles. Western Chemical Company, Hutchinson, Minn. Accepted for the Appendix to New and Nonofficial Remedies (Jour. A. M. A., Feb. 10, 1917, p. 461).

ITEMS OF INTEREST.

Novocain Decision.—The United States Circuit Court of Appeals for the Second Circuit in an unanimous opinion has confirmed the decision of Judge Grubb of the United States District Court, holding that Novocain and such other preparations as Anesthesin, Orthoform, Holocain, etc., do not come under the Harrison Anti-Narcotic Act, and therefore physicians, dentists, druggists and wholesalers prescribing, using or selling them can do so without registering or using the Harrison narcotic blank in ordering them. This would seem to sustain the contention that Novocain is not a habit-forming anesthetic and in no way related to Cocain or the other products included under the Harrison Act.

Emetine in Dysentery and Pyorrhea.—Emetine is accepted to-day as an almost ideal specific against amebic dysentery. Experience indicates that by its use abscess of the liver can be prevented and even cured. When a differential diagnosis between amebic and bacillary dysentery cannot be made, emetine may be of diagnostic value because improvement follows from its use if the case be amebic. In neglected cases and some other forms of the disease the emetine treatment may fail of complete success. As a direct cure for pyorrhea emetine seems to have failed, not because it does not act on the ameba which are found in the pyorrheal pockets but because pyorrhea is not caused by ameba (Jour. A. M. A., Feb. 3, 1917, p. 374).

The Phenolsulphonephtalein Test.—It has been assumed that excretion of less than 60 to 80 per cent. of phenolsulphonephtalein in two hours is an indication of renal insufficiency. It has been found, however, that in certain experimental conditions, phenolsulphonephthalein may be destroyed in the body and therefore not appear in the urine although the kidneys function normally. If this condition is found to occur in clinical cases the interpretation of the tests may have to be limited to this: an excretion of 60 to 80 per cent., i. e., a positive result, within two hours after the injection of the phenolsulphonephthalein is evidence of satisfactory renal activity (Jour. A. M. A., Feb. 3, 1917, p. 379).

Glycerophosphate Comp. Ampules, 1 c. c., Squibb.—The Council on Pharmacy and Chemistry refused recognition to Glycerophosphate Comp. Ampules, 1 c. c., Squibb, each said to contain sodium glycerophosphate 0.1 gm., strychnin cacodylate 0.0005 gm., and iron cacodylate 0.01 gm., because the name did not indicate the potent ingredients and because the administration of a mixture of sodium glycerophosphate, strychnin cacodylate and iron cacodylate is irrational. In recognition of the Council's conclusion, Squibb and Sons state that the sale of the ampules has been discontinued. This co-operation in the work of the Council on Pharmacy and Chemistry is gratifying (Jour. A. M. A., Feb. 3, 1917, p. 388).

Fate of Trypsin in the Stomach.—Judging by recent experiments, it appears that the proteolytic enzyme of the pancreas isolated as trypsin is capable of withstanding a rather long digestion in presence of hydrochloric acid and pepsin, provided that sufficient protein is present to combine with all or a part of the acid and so bring the free acid down to a certain level. From the observations it seems possible that some tryptic digestion may occur within the stomach when the free acid is low from combination with protein. The results do not, however, even remotely suggest that the administration of a few grains of the various commercial products claimed to contain trypsin or pancreatin would have the slightest therapeutic significance (Jour. A. M. A., Feb. 17, 1917, p. 554).

ORGANIZATION OF THE MEDICAL RESERVE CORPS, U. S. ARMY, STATE OF CALIFORNIA.

It has been suggested by the Association of Military Surgeons that the Medical Reserve Corps in California organize a state association. Its meeting to take place at the same time as the California State Medical Society, at Coronado, California, April 17th, to 19th, 1917. Its purposes will be to foster patriotism and preparedness for war service among medical men, to strive for the best interest of the corps, to elect delegates to the national association which will meet annually at the time and place of meeting of the American Medical Association. Notice of exact date and time of meeting will be mailed to individual members of the Corps.

W. S. JOHNSON, M. D., Chairman,
Section on Medical Preparedness San Francisco County Medical Society

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EXAMINATION BY NATIONAL BOARD OF EXAMINERS.

The second examination to be given by the National Board of Medical Examiners will be held in Washington, D. C., June 13, 1917. The examination will last about one week.

The following states will recognize the certificate of the National Board: Colorado, Delaware, Idaho, Iowa, Kentucky, Maryland, North Carolina, New Hampshire, North Dakota and Pennsylvania. Favorable legislation is now pending in twelve of the remaining states.

A successful applicant may enter the Reserve Corps of either the Army or Navy without further professional examination, if their examination papers are satisfactory to a Board of Examiners of these services.

The certificate of the National Board will be accepted as qualification for admittance into the Graduate School of the University of Minnesota, including the Mayo Foundation.

Application blanks and further information may be obtained from the Secretary, Dr. J. S. Rodman, 2106 Walnut street, Philadelphia.

ARMY MEDICAL CORPS EXAMINATIONS.

The Surgeon General of the Army announces that preliminary examinations for appointment of First Lieutenants in the Army Medical Corps will be held at convenient points the first Monday in each month. Full information concerning these examinations can be procured upon application to the "Surgeon General, U. S. Army, Washington, D. C."

The essential requirements to secure an invitation are that the applicant shall be a citizen of the United States, shall be between 22 and 32 years of age at the time of commission at the close of the Army Medical School, a graduate of a medical school legally authorized to confer the degree of Doctor of Medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training as intern after graduation.

Graduate physicians who are serving their internship and who meet the other requirements can be examined for appointment with the understanding that they will complete the required post-graduate hospital internship before coming to the Army Medical School.

Those who qualify at their preliminary examination and complete their hospital internship by July 1st will be ordered to the Army Medical School for the special session of the school commencing July 9th. The regular session of the school will open on October 1.

In order to perfect all arrangements for the examination, applications should be completed at the earliest practicable date.

There are at present 230 vacancies in the Army Medical Corps.

After July 1 there will be 222 additional vacancies.

March 3, 1917.

The Editor,
California State Journal of Medicine,
San Francisco, California.

Sir: Should the country ever be engaged in war, the Medical Department of the Army in calling Reserve officers to the colors, wishes to cause as little hardship and sacrifice to the Reserve medical officers as may be consistent with the needs of the country. With this end in view the Department desires that you bring to the attention of the profession at large the necessity of the city, county, and state medical societies organizing for the purpose of taking care of the practices of the officers of the Reserve who respond to a call for service. In England this plan has proven of great benefit. The idea of the Department is that the profession should organize upon a similar basis.

For example, should Dr. Jones be called to the colors, the local medical society, through its members, would take care of his practice during his absence. Upon relief from active duty his practice would be returned to him intact. Such a plan will cause no unnecessary hardship upon the officer responding to a call for service; while the absence of such plan would penalize the officer who gives his service to the country in a crisis. The Department appeals to the patriotism of the profession, to protect the interest of those of the profession who may be called to duty in war.

For the Surgeon General,
Sincerely,
ROBT. E. NOBLE,
Major, Medical Corps, U. S. Army.

THE PHARMACISTS AND PREPAREDNESS.

A course has been organized by the College of Pharmacy, University of California, to prepare the students to qualify as non-commissioned officers in the Sanitary Troops in case of war. The course consists of instruction in first aid, by Dr. Richard J. Dowdall, and in regular drills at the Presidio under the instruction of non-commissioned officers of the Sanitary Troops. Eighty-seven students at the College are attending the first aid course, and fifty-two are enrolled in the drill course.

FLEECING THE DOCTORS.

The San Francisco Police Department has called our attention to a criminal who is "working" the doctors and druggists by means of the following letter. The description of the man is furnished by the police. Notify them should he come your way.

Woodland Ranch.
Woodland, Cal., March 6, 1917.

Dear Sir:

This will introduce to you Mr. August D. Cavernora, who has been in my employ as a foreman for the last eight or ten years. Since that time he has been ailing for about nine or ten months and his case is constantly getting worse.

Now, doctor, I have been recommended to you by Dr. E. Gray and also Dr. Stratton, both of Marysville, California. Mr. Cavernora has been sent to you on their request. Would like to state that Mr. Cavernora has a wife and three children and is not abundantly supplied with this world's goods, and for that reason wish you would be as reasonable as possible. He has also got two or three more recommendations, but I advised him to go to you first. Mr. Cavernora is coming to you for examination and if you think you can cure him within a reasonable length of time I would suggest that you would keep him in San Francisco close by you.

Mr. Cavernora has been to several different doctors but from not one of them did he derive any benefit. I also would like to state that if Mr. Cavernora's funds should run out I will credit his account to the amount of $250.

Kindly notify me before his funds have run out. Also kindly send me a letter as to the result of your examination, stating when you think he will be able to resume work.

Wishing you success, I am
Yours very truly,
WILLIAM J. H. McLANE.

Description of Cavernora:

Age 30; 5 feet 6; 150; looks like an Italian or foreigner; dark sack suit; dark gray overcoat.

NEW MEMBERS.

Dolan, Paul E., Livermore.
Glenn, Robt. A., Oakland.
Martin, L. A., Oakland.
Wythe, Margaret, Oakland.
Ellis, Walter L., Calexico.
Richter, Henry Carl, Calexico.
Brown, F. Earl, Fellows.
Goodall, Oswald Patrick, Bakersfield.
Paulson, J. E., San Quentin.
Klick, John J., Sutter Creek.
Holliger, Charles D., Stockton.
Conzelmann, Fred J., Stockton.
Coleman, Barney E., Mokelumne Hill.
Brown, T. H., Orland.
Rose, L. M., Santa Clara.
Stadtherr, Edw. F., San Jose.
Fraser, Morton Wm., Lemon Cove.

DEATHS.

McFarland, W. L., Benicia.
Healy, John Hopkinson, San Francisco.
Thompson, George Howard, Seattle, Wash.
Hume, Wm. Robert, Oakland.

California State Journal of Medicine.

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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. XV MAY, 1917 No. 5

MOBILIZATION OF MEDICAL RESOURCES.

The United States of America is at war with Germany. The medical profession stands, as always, ready and willing to do its full share of duty. Up to the time of writing (April 10) there has been no clear declaration of what is wanted, no statement concerning the manner of mobilization of the potential medical power of the country. In another column we publish the scheme of the Council of National Defense. This outline should be studied and thoroughly understood by each and every reader of the Journal. It is the means by which the central authority will be enabled to use the capacity of the individual physician to the utmost. The State Committee of the Council of National Defense has a list of names of physicians which it was able to gather many months ago, when the need for the services of all was not pressing, or at least was not understood by the profession to be pressing, and which represents but a small portion of the available medical force which can be used when the country needs it. It consists of the few who *stated* at that time that they were at their country's call, but not of the many who, when the need is at all apparent, are just as ready to serve. The greater part of the profession is in the dark as to just what is wanted of it. It does not know just what to do.

We would urge upon our State Committee of the Council of National Defense that it classify in a scientific manner, which means in a way available for use, the *entire* medical profession of the state with respect to the work for which each man is best fitted, so that when he is called upon to volunteer or is drafted, he can serve the nation in his fullest measure; so that each unit of the army will have its proper proportion of sanitarians, internists, surgeons, aurists, oculists, dentists, other specialists, and even chiropodists. No detail should be neglected which will give to the men in the field and training-camp, and to that portion of the population remaining at home the best possible care. The Army and the Navy and the Red Cross and the Council of National Defense should work so in harmony that when assignments of men are to be made, the lists of the Council should determine who is the very best man for the position in question and any assignments should immediately be reported to the Council so that its lists will always be up to date. There should be not even a chance of a repetition of such mistakes as were made in the Spanish-American War, when, for instance, one of the most noted public hygienists in the United States was put to doing surgery, and, *after the war*, was a member of the Committee to determine why there was so much typhoid fever in the army-camps.

It is against the policy of the Journal to mention the name of any commercial organization in its editorial columns, but we shall, as a matter of public necessity, be inconsistent. There is available, in the Medical Addressograph Service in San Francisco, a fairly complete classification of the physicians of all schools, licensed to practice the healing arts in the state. This service has the men grouped both geographically and according to specialties, so that it may well serve as a basis upon which the Committee can begin its task. Such a classification by the State Committee, supplemented by lists from the County Committees in which *all* the medical capacity is classified, will be worth while. It is not necessary to know alone who is best fitted to go to the front, but also who is best fitted to work at home. Age, health, dependents and numerous other factors should be taken into account, besides medical fitness.

But all of this work depends upon local funds, so that each county society should immediately appropriate some money for this purpose. Let each society finance its own County Committee and send an adequate sum for the use of the State Committee. The Council of the State Society should appropriate a sum for the work of the State Committee.

In the meanwhile every unattached, unmarried physician under the age of forty-five upon whom the support of others does not depend should immediately join the Officers' Reserve Corps both to minimize the difficulty of recruiting reserve officers, and because immediately camps are established, large numbers of physicians will be necessary. This applies particularly to recent graduates.

The medical profession of the State of California is behind the President and is ready to do its duty.

DIVISION OF FEES.

A retired physician, who is now actively engaged as a banker, in relating to the writer of these paragraphs that the people of his town had so much confidence in him that "nothing big could come off" (note the language of the counting house) in a medical way unless he were consulted, went on to say that he rarely charged for this consultatory service because most of the townsmen were old friends of his. And then he went on again, in the most casual manner, and made the astounding statement that there were no capable surgeons in his town, and that he sent all the surgical cases he could to "the city," and that the city surgeon sent him half the fee, and that he was thus able to *"pick up a couple of thousand a year."*

When taken to task, he offered the argument that he had nothing whatever to do with the transaction. The surgeon makes his own price for the services, collects the money and, with no solicitation on the part of the "banker-doctor," sends him half. The "banker-doctor" says that it is none of his business if the surgeon is willing to present him with half his earnings.

He was not alone unwilling, but definitely objected to have the transaction characterized in the plain Anglo-Saxon terms, dirty and crooked. He vigorously maintained that his skirts were clean, and that his patients were not in any sense mulcted. *But he refused to reveal the name of the surgeon!*

Do you see the point? Is it necessary to lead you to the moral? Isn't it as plain as the nose on your face? Is it right?

THE THOUGHTLESS DOCTOR.

It seems to make no difference how often commonplace advice is repeated; every so often it requires re-statement. The Journal has called attention again and again to the number of malpractice suits arising from a thoughtless statement of a physician. Given such a statement, an ignorant or malicious patient, and a shyster lawyer, a malpractice suit follows as a matter of course. Most of the trouble arises from patients who migrate from doctor to doctor, picking up fragments of statements as they migrate. Of course, most of these suits are groundless and are dropped, but they are nevertheless a burden upon the budget. Many of our recent suits have arisen in just this way. This matter is a straight dollars and cents proposition. Every one of these suits, unfounded as they are, costs so much money for legal services. In the aggregate they are sufficient to increase or decrease the amount of your premium.

It is not alone a duty, but a pleasure, for the Society to defend members in malpractice suits, but it does hurt to see its funds depleted and diverted because one of its members has said something that he really did not mean.

THE LEGISLATURE AND MEDICINE.

At the time of writing the State legislature is still in session and will be for about two weeks. As usual it has had various medical problems to consider and it can be said that up to the present time it has, on the whole, done well. It must be remembered that the average senator and assemblyman has no desire to see vicious or undesirable legislation passed. He wants to be advised, but unfortunately the great bulk of the medical profession is apathetic and does nothing, and the most pressing and compelling advice comes from those interested in vicious medical legislation. Naturally when a legislator receives numerous urgent requests for certain action in matters pending and there is little or no objection to the same he is very much inclined to consider the former as "a request from the people," and act accordingly. Bear this in mind please, those of you who do nothing until the fight is all over and then attempt to criticize. The California State Medical Society ought to develop and exert its political strength more forcibly. With almost 5000 regular practitioners in California and only about 1000 osteopaths and about 130 drugless healers, it will be seen that the representatives of different freak cults have political influence all out of proportion to their numbers. It is humiliating to realize that this is the case. It need not be any longer if we will only exert ourselves. Now is the time to get ready for the next legislative session two years hence. Interview your present senators and assemblymen and later on their successors and have them promise to consult you in regard to medical legislation.

RADIUM.

Local physicians have purchased during recent months quantities of radium element aggregating 250 milligrams for use in their respective practices. This radium is mounted in various types of applicators designed for Dermatological, Gynecological and Surgical uses.

The United States Bureau of Standards at Washington provides for the measurement of radium expressed in terms of actual radium element contained, and issues certificates based on the International Radium Standard.

The present market price of radium is $100.00 per milligram. There is a strong probability, however, that the great advance in the costs of production, chemicals and laboratory equipment, will sharply affect radium production, and an early advance is inevitable.

Radium is extracted from uranium ores, large deposits of which are found in Colorado. It is from this source that the main supply is obtained

commercially. To produce one gram of radium element from 400 to 800 tons of carnotite ore must be treated. About 700 tons of chemicals are required for the extraction of one gram of radium.

The quantity of radium employed in the treatment of malignant conditions ranges from five milligrams to one hundred milligrams and upward. For dermatological uses quantities of from five to twenty-five milligrams are employed. In gynecological and surgical conditions from twenty-five milligrams upward are required. The dosage depends upon the nature of the lesion and its location. When larger quantities of radium are employed the exposure may as a rule be correspondingly shortened. The half-life period of radium is 1780 years.

During the Detroit meeting of the American Medical Association last year the American Radium Association was formed for the scientific study of radium and its uses. This organization will hold its next meeting in New York during the week of the American Medical Association Convention.

HEALTH INSURANCE.

If the enabling amendment proposed by the Social Insurance Commission of the State of California goes through the legislature (at this writing it has passed the Senate with every likelihood of receiving a majority in the Assembly), the people will have to decide for themselves as to whether they wish to endorse the principle of health insurance. If they do, we shall be asked to give our services to that class of individuals coming under the act, our organization, fees, etc., to be fixed by law.

If, as we are told, health insurance must come, there are certain fundamental principles, which we think should be impressed upon the minds of every person thinking or talking health insurance.

The cost should be borne partly by the employer, if there be one, partly by the employee, and partly by the State. This is the best way to interest employers in the health of their workers, and to enlist their aid in prevention of disease, for we know that the industry is often responsible for some of the sickness of its employees. The health of employees or their families may be affected by home surroundings, habits, or by the unavoidable incidents of life.

The cost of sickness is not going to be wiped out by health insurance. Its burden is simply going to be shifted. If a man is paid money benefits while ill, for work he is not doing, there is a money loss to someone just the same. But if the worker who ordinarily would have no care, and whose illness would become a serious one, by proper and early care is sick but a short time, there is a money gain to someone, somewhere. And if it is found that to pay physicians and surgeons fees commensurate with their services, is going to make the scheme an expensive one, beyond the means of the three parties who will be asked to contribute thereto, then either the state must learn that lives cannot be measured by dollars and cents, or it should not engage in health insurance. It is almost pathetic to think that in times of war we are willing to vote for billions for our defense against a foreign enemy, billions for materials which are made but to be destroyed, and yet when at peace, we hesitate to vote a few paltry millions for defense against the enemy who is ever present in our midst: sickness.

The cost is therefore, to our mind, no reason, no excuse for low medical fees. And if we are to have our just dues, we, as citizens, want to deal in these matters directly with the state and not with corporations run for profit, this profit frequently made at the expense of the profession. There are many of us who have complained of the methods of the insurance companies doing industrial accident work. We felt that the State Fund was in a class by itself. But, lo and behold! as a result of its competition with companies run for profit, it too resorted to methods most objectionable to the profession. Without competition, it is claimed, the profession would not have been subjected to the treatment it has received.

Therefore, we object to any bill for health insurance if it does not provide for the exclusion of private companies run for profit, from the field.

Health insurance should not be limited to the man who has a job. Provision should be made to furnish medical care to the unemployed, the shiftless and the pauper. The county now provides for the latter. The state could undertake this and medical men should be paid for service to the indigent as well as to the employed.

But even while considering health insurance, let us see to it that the State give its unqualified support to the State Board of Health in its preventive work. Let us see to it that our housing and factory conditions measure up to the standards imposed by law. And let us try and educate the public to demand only the best medical service, and to appreciate the fact that the best medical service cannot be obtained cheaply, simply by act of legislature.

It is possible that after all, if we are to have health insurance, the best results might be obtained by the universal application to every man, woman or child, whether they pay any part of the cost or not. Cash benefits should be arranged so that only those paying assessments would be entitled to them, or left as now, to existing benefit societies.

It is hoped that the legislature will grant further life to the Social Insurance Commission, with an adequate appropriation to carry on a more intensive study of these matters. R. B.

ANNOUNCEMENT.

At its last meeting the Council granted the Publication Committee permission to increase the size of the Journal 16 pages per issue for a limited period. This will relieve the stagnation of papers received and not yet published.

HENRY LEBER COIT.*

Men of achievement in medicine are truly rare. It is therefore only fitting when the life's work of one who has truly achieved something fundamental, is ended, that the profession should realize its loss.

In this time of chaos, when life hangs on so small a thread, and men all over the world are dying so that the future may mean more to humanity, it is well to realize that some minds are still devoting themselves to bettering humanity by saving lives.

Such a mind had Henry L. Coit. Graduating in medicine in 1883, he early devoted his time and efforts to the treatment of diseases of infants and children. Laboring as he did in the frightful summers in the East, he early realized that something must be done to stem the ravages of the infantile intestinal disturbances with their frightful mortality. He therefore studied the problem with his highly characteristic force and determination, and reached the conclusion that no single feature was probably playing as great a role in the etiology of Summer Diarrhea as dirty milk.

Only one who has heard Dr. Coit discuss the long and patient struggle that he had to impress upon the profession and the people the importance of his ideas, can realize the stamina and persistency that were necessary to bring his thoughts to a successful issue. In 1893 he formed the first Certified Milk Commission in Essex County, New Jersey, for the purpose of supervising the production of clean milk from non-tuberculous cows.

The profession is accustomed to pass over statements of this type without reflection. How wonderful to have been a man whose mind was keen enough to start a movement that meant the saving of the lives of thousands of infants, and yet how little most of us appreciate the work.

Men like Erlich and Behring die, and beyond a column in the Medical Journal, the world is absolutely ignorant that a genius has passed, and as far as the profession is concerned, a fleeting thought, and the big men are all but forgotten.

Dr. Coit was a man of keen perception and sterling character. His was a life lived strictly by the Golden Rule. In his home he was a kind but firm father, ever thoughtful of those around him, but at the same time, never forgetful of the fact that love must be tempered by judgment.

It was the writer's privilege to know him only during the last few years of his life, but it was indeed a rare privilege. The interest, the solicitude, the enthusiasm for his life work, and above all, for the Certified Milk Movement, were indeed wonderful to behold, and no one could have known Henry L. Coit well without having profited.

The younger members of the profession looked up to him, not only as a man who had truly accomplished something, the value of which was inestimable, but as a true friend to whom they could always go for advice and encouragement, and in turn, his attitude towards them was never that of condescending seniority, but rather that of a colleague who was ready at all times to receive the ideas of less mature minds and give them reflection and consideration.

Kind, thoughtful, sincere, ever solicitous of the welfare of others, Henry L. Coit died as he had lived, trusting that the work which he had started might go on with unqualified success.

Those of us who knew him shall miss him, but it will always be a source of consolation to his friends that the world was better off because Henry L. Coit lived in it.

* An Appreciation: San Francisco County Medical Milk Commission.

DAY DREAMS.

It is said that at the Harvard Medical School something like 168 courses are to be had by graduates in medicine each year. The fees accruing from these courses approximate $10,000. Of this sum $8,000 is paid in for Dr. Cabot's course in medical diagnostics, while the remaining $2,000 is contributed by the other 167 courses.

What pleasing day dreams might find harborage in the mind of a megalocephalic internist did he permit himself to speculate on such a text! How must his vanity expand and sun itself as there appeared before his mental vision the class, mute, pen in hand, note book on knee, leaning forward to catch and record his every word—a whole regiment sitting at his feet,—even as Saul sat at the feet of Gamaliel. The while about him, crook kneed, uncovered, reverential, gather his assistants and associates, each like "Some grave Pachaw at the Prophets' feet Piously licking them, swearing them sweet." Well might he cry, "Ah, sweet, sweet dream, depart not yet from me."

Now the direction of his dream changeth, but not the quality. How profitably might he not thus employ his much too spare time? For in his dream each of the pupils—and their name is legion—is glad to part with much fine gold for the privilege of sitting at the Master's feet. Poor old Get-rich-quick Wallingford, verily thou wouldst waste away with envy—in his dream.

And, still dreaming, how easy it all is of accomplishment. Has he not but to start a new school or to rehabilitate an old one, to name the teachers, announce the courses and let the pupils appear? Of course they would appear—in his dream.

And after all, there is but one essential to the realization of such a scheme. He must be another Cabot—and that's no dream. SNIKTAW.

THE WAR, MEDICAL CULTS, AND THE LONG-SUFFERING DOCTOR.

When peace fills the land, how it is the fashion to decry the long-suffering doctor. How he and his works and his ideals are held forth to ridicule and scorn and contumely by the yellow medical press, and newspapers of a kind, and "Life," and all the misguided host of fadism who put their trust in quack, charlatan, -path and -ism. How the Legislature and the City Council and the Congress begrudge him law and money for disease prevention, and for establishment of sane and safe health conditions. How he is execrated, and mis-

interpreted, and underpaid, when peace fills the land. Lo, the poor doctor, fool that he is, trying to destroy his own means of livelihood, trying to return public good for private evil, trying to make the preposterous ideal of service in the world, the guide of his daily conduct.

Then see the remarkable effect of war. Forthwith must this same doctor assume as of right, full responsibility for the health and physical efficiency of the fighting man, and the civilian populace alike. He is expected by common consent to meet the emergency at whatever cost of time, livelihood and life may result. And he assumes the responsibility and meets the emergency, going cheerfully and voluntarily into a service which is only less dangerous than the flying corps. What he is expected to do, he does. What he has trained himself to do, he does. His detractors, and critics and enemies in time of peace, expect him to do this and he does it.

But in times of war where are the self-sufficient and highly trained -paths and -isms and fads and cults? Where is the Christian Science medical unit going to the front to care for the wounded? Where is the osteopathic base hospital, and the naturopathic dressing station, and the chiropractic sanitary corps? What a chance for the drugless healers to cure trench foot, and eradicate disease carriers, and prevent camp epidemics. What a chance for the so-called Christian Scientists to show their Christianity in works of relief and mercy, and their science in the care of wounded and sick. What a chance for cult and -ism to prove their mettle, and speak by action. What a chance,—what a rare chance. Yet where are they, when the serious business of war clangs in, to sift the wheat from the chaff, and winnow out the real effectual human service of the physician?

A. C. R.

BLINDNESS IN THE UNITED STATES.

The forthcoming report on the blind in the United States announced by Director Sam. L. Rogers, of the Bureau of the Census, Department of Commerce, indicates that 30.8 per cent., or somewhat less than one-third, of the blind population lost their sight when less than 20 years of age (including those born blind); 47.4 per cent., or somewhat less than one-half, during the early or middle years of adult life (from 20 to 64 years); and 21.8 per cent., or a little over one-fifth, in old age (after passing their sixty-fifth year). More persons were reported as having lost their sight when less than 5 years of age than in any other five-year period of life, 16.4 per cent., or about one-sixth, of the total being included in this group; persons reported as born blind formed 6.6 per cent. of the total and persons reported as losing sight when less than 1 year old 5 per cent., these two groups together contributing 11.6 per cent., or more than one-tenth, of those reporting the age when vision was lost.

These statistics are based on an enumeration of the blind made in connection with the census of 1910. The blind population enumerated was 57,272, and by sending out special schedules through the mails the Bureau obtained data regarding such subjects as the cause of the blindness and the age when it occurred from 29,242 blind persons.

SIGNIFICANCE OF THE STATISTICS.

The fact that the 30,000 blind represented in the returns had on the average been blind for 10 years makes plain the gravity of this misfortune. Although the risk of blindness in infancy, childhood, or youth is relatively small, yet, as shown by these figures, the complete elimination of that risk would reduce the blind population by nearly one-third. Similarly, the elimination of the risk of blindness during the early or middle years of adult life would reduce the blind population by nearly one-half, while the elimination of the high risk in old age would cause a reduction of only one-fifth in the number of existing cases. Of course, the earlier the age at which the sight is lost, the greater the magnitude of the misfortune; loss of sight in infancy means a life of blindness, while loss of sight in old age ordinarily means only a few years of that affliction. For this reason the increase in individual happiness and the benefits to society in general that would accrue from a successful campaign against blindness in early life would obviously be vastly greater than would result from a corresponding reduction in the blindness occurring in old age. In this connection it is significant that since 1880 there has been a distinct decrease in the proportion of blind who lost their sight in infancy. In 1880 persons who became blind before completing their first year of life formed 15.3 per cent. of the total reporting, as compared with only 11.6 per cent. in 1910. This decrease is explained largely by the great progress made toward preventing blindness among newborn infants through the use of the Credé method of prophylaxis for ophthalmia neonatorum, which was discovered in 1884.

RELATIVE INCREASE OF OCCUPATIONAL BLINDNESS.

The proportion of the blind who lost their sight during the early or middle years of adult life has increased somewhat since 1880. It is probable that this increase is in part the result of the great industrial growth of the United States in the last 30 years, which would naturally bring in its train an increase in the number of cases of blindness due to occupational injury or disease, and hence in the number occurring during the years of economic activity.

A much larger proportion of males than of females lost their sight in the early or middle years of adult life (20 to 64 years of age), the percentage for males being 51.4, or more than one-half, as compared with a percentage of 41.8, or about two-fifths, for females. This marked difference with regard to the period of life when loss of sight occurred is of course the result in the main of the cases of blindness from industrial accidents or occupational diseases, which are numerous among the male blind but are relatively few among the females, and in which obviously

loss of sight occurs for the most part during the early or middle years of adult life.

BLINDNESS A BAR TO MARRIAGE.

The statistics as to age at which sight was lost bring out some interesting facts concerning the extent to which marriage takes place among the blind. The majority of those who have not married before they lose their sight continue single for the remainder of their lives. But the fact that the percentage single is higher among the females who lost their sight before the age of 20 than it is among the males indicates that blindness is less of a bar to marriage in the case of males than of females, since, all other things being equal, the percentage should have been somewhat lower for females by reason of the fact that women ordinarily marry earlier than men. The figures show, however, that while marriage is much less frequent among the blind than among those who can see, it is by no means rare; of the males who had lost their sight between the ages of 15 and 19, for example, about one-third, and of the females, about one-fifth, had married since they became blind.

Medical Preparedness

INFORMATION REGARDING THE CORRELATED ACTIVITIES OF THE COUNCIL OF NATIONAL DEFENSE AND THE ADVISORY COMMISSION, THE MEDICAL DEPARTMENTS OF GOVERNMENT AND THE COMMITTEE OF AMERICAN PHYSICIANS FOR MEDICAL PREPARDEDNESS

Under existing conditions it is desirable that every physician as well as every other loyal citizen of America should be prepared to render active service to the Federal Government, remembering that the protection afforded by the Government has made it possible for its citizens to enjoy liberty, peace and prosperity.

The avenues through which the most effective service can be rendered by members of the medical profession have taken definite and concrete form. Briefly, the plan is that all medical activities should co-operate with the Council of National Defense.

It would seem desirable at this time to state explicitly just what the Council of National Defense and its various agencies are.

The Council of National Defense was created by Act of Congress, August 29, 1916.

Sec. 2. That a Council of National Defense is hereby established, for the coordination of industries and resources for the national security and welfare, to consist of the Secretary of War, the Secretary of the Navy, the Secretary of the Interior, the Secretary of Agriculture, the Secretary of Commerce, and the Secretary of Labor.

That the Council of National Defense shall nominate to the President, and the President shall appoint, an **advisory commission**, consisting of not more than seven persons, each of whom shall have special knowledge of some industry, public utility, or the development of some natural resource, or be otherwise specially qualified, in the opnion of the council, for the performance of the duties hereinafter provided. * * * *

That the Council of National Defense shall adopt rules and regulations for the conduct of its work, which rules and regulations shall be subject to the approval of the President, and shall provide for the work of the advisory commission to the end that the special knowledge of such commission may be developed by suitable investigation, research, and inquiry and made available in conference and report for the use of the council; and the council may organize subordinate bodies for its assistance in special investigations, either by the employment of experts or by the creation of committees of specially qualified persons to serve without compensation, but to direct the investigations of experts so employed.

A committee of distinguished physicians was asked to present to the President, names of medical men suitable for membership on the advisory commission. Dr. Franklin H. Martin of Chicago was selected.

The following statement was issued by President Wilson on the night of October 11, 1916, in announcing his appointment of the civilian advisory members of the Council of National Defense:

The Council of National Defense has been created because the Congress has realized that the country is best prepared for war when thoroughly prepared for peace. From an economic point of view there is now very little difference between the machinery required for commercial efficiency and that required for military purposes.

In both cases the whole industrial mechanism must be organized in the most effective way. Upon this conception of the national welfare the council is organized in the words of the act for "the creation of relations which will render possible in time of need the immediate concentration and utilization of the resources of the nation."

The organization of the council likewise opens up a new and direct channel of communication and co-operation between business and scientific men and all departments of the government, and it is hoped that it will in addition become a rallying point for civic bodies working for the national defense. The council's chief functions are:

1. The coordination of all forms of transportation and the development of means of transportation to meet the military, industrial and commercial needs of the nation.

2. The extension of the industrial mobilization work of the Committee on Industrial Preparedness of the Naval Consulting Board and complete information as to our present manufacturing and producing facilities adaptable to many sided uses of modern warfare will be procured, analyzed and made use of.

One of the objects of the council will be to inform American manufacturers as to the part which they can and must play in national emergency. It is empowered to establish at once and maintain through subordinate bodies of specially qualified persons an auxiliary organization composed of men of the best creative and administrative capacity, capable of mobilizing to the utmost the resources of the country.

The personnel of the council's advisory members, appointed without regard to party, marks the entrance of the non-partisan engineer and professional man into American governmental affairs on a wider scale than ever before. It is responsive to the increased demand for and need of business

organization in public matters and for the presence there of the best specialists in their respective fields. In the present instance the time of some of the members of the Advisory Board could not be purchased. They serve the Government without remuneration, efficiency being their sole object and Americanism their only motive.

As indicated above the Council of National Defense therefore consists of six members of the Cabinet as follows:

The Secretary of War, Chairman.
The Secretary of the Navy.
The Secretary of the Interior.
The Secretary of Agriculture.
The Secretary of Commerce.
The Secretary of Labor.

The Advisory Commission of the Council of National Defense consists of seven civilians appointed by the President. The members of the Advisory Commission are as follows:

Mr. Daniel Willard, President of the Baltimore and Ohio Railroad, Chairman.

Mr. Hollis Godfrey, LL.D., President of Drexel Institute, Philadelphia, Pa.

Mr. Howard E. Coffin, of Detroit (who is also chairman of the Committee on Industrial Preparedness of the Naval Consulting Board).

Dr. Franklin H. Martin, of Chicago.

Mr. Bernard Baruch, Financier, of New York.

Mr. Julius Rosenwald, Vice-President of Sears, Roebuck & Company, of Chicago.

Mr. Samuel Gompers, President of the Federation of Labor.

The two bodies meet in joint session at frequent intervals for the purpose of considering problems relating to national defense.

The executive activities of the Council of National Defense are coordinated and carried out through the medium of the Director of the Council of National Defense, Mr. W. S. Gifford, and the chiefs of the various departments represented by the members of the Advisory Commission. Dr. Frank F. Simpson is chief of the Medical Section of the Council of National Defense.

THE ADVISORY COMMISSION.

The organization of the Council and of the Advisory Commission provides that each member of the Advisory Commission shall gather about himself for the most effective co-ordination of the activities he represents, a committee or board consisting of representatives of governmental departments on the one hand, and civilian members on the other hand.

The Medical Committee, of which Dr. Franklin H. Martin is chairman, consists of:

Wm. C. Gorgas, Surgeon General of the U. S. Army.

Wm. C. Braisted, Surgeon General of the U. S. Navy.

Rupert Blue, Surgeon General of the U. S. Public Health Service.

Col. Jefferson R. Kean, Director General of Military Relief of the American Red Cross.

Dr. Wm. H. Welch, member of the National Council of Research.

Dr. Wm. J. Mayo, chairman of the Committee of American Physicians for Medical Preparedness.

Dr. Frank F. Simpson, Chief of the Medical Section of the Council of National Defense, and Secretary of the Committee of American Physicians for Medical Preparedness.

Many medical problems which have bearing upon the national defense are considered by Dr. Martin's Committee and by the Advisory Commission and the Council of National Defense before being put into action by the governmental departments concerned.

COMMITTEE OF AMERICAN PHYSICIANS FOR MEDICAL PREPAREDNESS—ITS COMPONENT PARTS.

National and State Committees.

In April, 1916, the national committee was appointed by the joint action of the presidents of the American Medical Association, the American Surgical Association, the Congress of American Physicians and Surgeons, the Clinical Congress of Surgeons of North America, and the American College of Surgeons. To that committee was delegated the responsible duty of formulating plans whereby the civilian medical resources of the United States might be ascertained and effectively co-ordinated for such purposes as might be required by the Federal Government.

The national committee organized, selected a chairman and secretary and an executive committee, and appointed a state committee of nine strong men in each state of the Union.

It is the fixed policy of this committee that all presidents and secretaries of the various state medical societies shall be members of their respective state committees during their incumbency in office. From the first it was contemplated that at the proper time the organization of committees would be perfected in each county of the country. That time has now come and county committees are being rapidly organized.

In each instance the state committees are expected to select the county committees and to supervise their formation.

NAME AND PERSONNEL OF COUNTY COMMITTEES.

It is the fixed policy of the Committee of American Physicians for Medical Preparedness that the various important medical interests and activities of each county shall be represented on the county committees. This is done for the purpose of co-ordinating the important interests and activities so that the medical profession of the nation may present a compact and effective organization for the purpose of aiding effectively in the national defense. In order that this plan may be carried out with uniformity and precision throughout the country, the various state committees have been requested to have all county committees bear the following distinguishing name, to wit: The Auxiliary Medical Defense Committee of..... County, in.....State. The state committees have also been requested to provide that the county committees shall include the following in their list of members:

1. All members of National Committee of the

Committee of American Physicians for Medical Preparedness, resident in the individual county.

2. Members of the State Committee resident in or near the individual county.

3. Representatives of the U. S. Army resident in the individual county.

4. Representatives of the U. S. Navy resident in the individual county.

5. Representatives of the U. S. Public Health Service resident in the individual county.

6. Representatives of the State Board of Medical Examiners residing in the individual county.

7. Representatives of the State or City Public Health Service.

8. Ranking medical officer of the National Guard.

9. President and Secretary of the local Medical Officers' Reserve Corps Association, if there should be such an organization.

10. Deans of medical schools.

11. President and Secretary of the County Medical Society.

12. President and Secretary of any other important medical societies.

13. Medical Director of the local Red Cross Units.

14. Other representative medical men.

DUTIES OF COUNTY COMMITTEES.

From time to time specific duties will be assigned to the various state and county committees. These duties will be in accord with the policy of the Council of National Defense, and should be executed promptly and precisely by those who are called upon to co-operate in this manner with the Council of National Defense.

The committees will call to their assistance those who have been appointed field aides by their various state committees and such other physicians as they may desire to have co-operate with them.

Among the specific duties which the county committees are requested to perform at this time are the following:

First: That these committees co-operate with the National and State Committees of the Committee of American Physicians for Medical Preparedness in their efforts to gain needful information regarding the civilian medical resources of their own communities, and in their efforts to coordinate civilian medical activities for prompt mobilization in case of need.

Second: That they secure applicants:

(a) For the Army Medical Corps. If the President should call the full complement of troops already authorized by Congress, the Regular Army would need about 1,200 additional medical officers. If a million men should be called, a corresponding increase would be required.

(b) For the Medical Officers' Reserve Corps. If war should come, 20,000 to 30,000 medical reserve officers should be enrolled.

(c) For the Naval Medical Corps which needs about 350 additional officers.

(d) For the Coast Defense Reserve Corps of the Navy. Several hundred high class reserve medical officers are desired.

(e) For the National Guard, such numbers as may be required to bring your local National Guard to full strength.

In the preparation for National Defense the first thing needed will be medical officers.

Physicians recommended for such service should be of the highest type. They should be free from suspicion of addiction to drugs or drink.

Medical officers who go to field duty should by preference be under the age of forty-five.

Third: That they co-operate, individually and collectively, with the Medical Department of the Army, Navy and Public Health Service and with the Council of National Defense.

Fourth: That they co-operate with the Red Cross in their efforts to bring that organization to the highest point of efficiency.

COMMITTEES OF AMERICAN PHYSICIANS—ACTIVITIES ACCOMPLISHED AND IN PROGRESS.

On the 26th of April, 1916, the Executive Committee of the Committee of American Physicians tendered the services of the committee to the President of the United States. He expressed himself as being pleased with the patriotic tender of services and regretted that existing laws did not permit the acceptance by the Federal Government of gratuitous services, but stated that the matter would be referred to the Secretary of War and the Secretary of the Navy for the purpose of devising plans by which the good offices of the medical profession could be accepted and utilized to best effect by the Federal Government. He further stated that the plans would be referred to the Committee of American Physicians for comments and suggestions. The Executive Committee was permitted to make suggestions regarding the bill creating the Council of National Defense.

During the last year this committee and its various subsidiary bodies have been actively engaged in formulating and carrying out various activities in conformity with the general plans for national defense, which have been undertaken by the Federal Government.

The splendid work done by the various state and other committees was of such extent and value that the Council of National Defense at its first meeting requested the Committee of American Physicians to continue their various activities under the guidance of the Council of National Defense, and asked the Secretary of the Committee of American Physicians to act as chief of the Medical Section of the Council of National Defense. Since that time the various activities have gone forward with renewed energy.

Some of the activities which have either been completed or are well under way, follow:

1st. Some 20,000 medical men selected from all parts of the country have been classified according to the training and the kinds of work which they do best.

2nd. An inventory of hospitals and other medical institutions is well under way.

3rd. It has been the fixed policy of the Committee of American Physicians to aid the American Red Cross in bringing its medical department to the highest point of efficiency. With that object

in view, and in order to foster the spirit of co-operation, the members of the National Committee of the Committee of American Physicians accepted invitations to become members of the national committee of the medical department of the American Red Cross. In order further to promote the harmonious co-operation of the two organizations, most of the members of the various state committees of the Committee of American Physicians were also made members of the state committees of the American Red Cross. The various county committees will also be expected to co-operate in carrying out the plans of the two organizations.

4th. The establishment of military training for senior medical students in a large percentage of the high grade medical schools of the country.

5th. The establishment of more effective military training for hospital groups for members of the Medical Officers' Reserve Corps, for dental students, and others.

6th. The appointment of a Committee for the Standardization of Medical and Surgical Supplies and Equipment. The purpose of this work is to designate a list of articles essential to the successful conduct of civilian and military medical and surgical activities so that in the event that it should become necessary to curtail production all of the energies of the drug and instrument makers would be devoted to necessary articles rather than to those which are desirable but not essential. On this Standardization Committee are representatives of the Army, the Navy, the Public Health Service, the Red Cross, the Council of National Defense, and a number of the most distinguished members of the various specialties of civilian medicine. In their work of co-ordination and standardization this committee will take council with the manufacturers of the various supplies under consideration.

7th. Much valuable information supplied by medical and other observers who have worked in the war zones of Europe is being gathered and classified.

8th. The presidents of important national medical organizations of the country have been requested to suggest to the medical section of the Council of National Defense the kinds of work which members of those organizations are best fitted to perform, and to suggest plans whereby their activities and resources might be utilized to best advantage. This request does not contemplate an inventory and organization of these resources. The purpose is that having received suggestions offered by the various organizations, those suggestions will be maturely considered and such as conform to the plans of the Council of National Defense and can be utilized to advantage, will be adopted. The various organizations will, in that case, be requested to co-operate fully and promptly in perfecting the plans of the Council of National Defense.

The foregoing memorandum embodies only a very small percentage of the problems now under consideration. It is neither wise nor desirable, however, to present them in detail at this time.

Original Articles

SOME EPIDEMIOLOGIC AND BACTERIOLOGIC OBSERVATIONS ON PARADYSENTERY INFECTIONS IN CALIFORNIA.*

By K. F. MEYER and J. E. STICKEL, of the George Williams Hooper Foundation for Medical Research, University of California Medical School, San Francisco, California.

In this communication we desire to call attention to the existence of some forms of bacillary dysentery in California and to discuss briefly some of the most important epidemiologic and bacteriologic facts collected during the year 1916.

Epidemiologic observations: Before 1914 no information concerning the occurrence of bacillary dysentery could be found in the Reports of the California State Board of Health. A brief note [1] in October, 1914, indicates that three cases of dysentery were observed in this State and that the circumstances of their occurrence warranted further investigation. At that time the writer discussed with Dr. Sawyer, director of the State Hygienic Laboratory, the possibility of epidemic dysentery existing in various localities of California, but was told that so far no bacteriologic evidence had been presented to that effect.

Our interest in the nature of some cases of infantile diarrhoea was aroused in October and November, 1914, when through the courtesy of Dr. W. P. Lucas, of the Children's Department of the University of California Hospital, several stool specimens were submitted for bacteriologic studies. From several samples a bacillus closely related to the dysentery bacillus was isolated, which, according to some English, American and French writers, is responsible for infantile diarrhoea. This is the Morgan's bacillus I. Upon investigation it was found that these cases of gastro-enteritis all came from a small epidemic which had occurred in a private sanatorium in San Francisco. Twelve out of sixteen children showed clinical symptoms, and at least seven of these cases ended fatally. We do not wish to discuss at this time the mooted question as to whether the Morgan's bacillus is the causative agent in these cases of infectious diarrhoea. Ten Broeck,[2] based on his wide experience in Boston, believes that this bacillus has nothing to do with this type of disease of children. Ledingham,[3] Nègre [4] and others present evidence which leaves little doubt but that in a number of instances the group of Morgan's bacillus, or Metacoli (according to Bahr [5]), acquires pathogenic properties. Thus far we have failed to find the same organisms in normal children and adults, or in those suffering from gastro-enteritis.

Over fifty different samples of stools, obtained from the clinic of Dr. Lucas, were examined by one of us [25] and we isolated only once an organism which biochemically would correspond to the Morgan's bacillus, but we classified it with the metacoli bacilli on account of its serologic behav-

* Read before the San Francisco County Medical Society, February 13, 1917.

ior. It is our belief, therefore, that the small house-epidemic of infectious diarrhoea which occurred in a sanatorium in San Francisco, was caused by the Morgan's bacillus.

During continuous examinations of stool specimens throughout the year 1915, we could not find one dysentery organism, or a like bacterium, in a single instance, until March, 1916, when our attention was called to the extensive epidemic of dysentery in Napa, which was described in detail by Cummings[6] in the Bulletin of the State Board of Health. Through the courtesy of Drs. Cummings and Geiger, we were able to examine some specimens collected in Napa towards the end of the epidemic. From three of the five samples examined, a bacillus belonging to the so-called Paradysentery Group I, or Hiss-Y-Russell type, was isolated and identified by agglutination tests with the patient's serum. Cummings furnished evidence in this publication concerning the etiologic relationship of this organism to infectious diarrhoea among the population of Napa. Out of twenty sera at least ten gave reactions which, according to our present knowledge, could be considered as positive. These findings will be further considered in a later portion of this communication. The explosive character of the outbreak and various other circumstances point strongly to the water supply as the common source of infection.

This epidemic represents the first instance in which a Paradysentery bacillus was found to be the cause of dysentery contracted in California. Several cases of bacillary dysentery came to our notice, but they were always contracted in the Orient or in the Philippine or Hawaiian Islands. The same cannot be said with regard to amoebic dysentery; aside from numerous imported cases we have had the opportunity of examining specimens of patients who had never been out of the State of California and who doubtless contracted the infection from cyst carriers inside the boundary of the State. According to the recent studies of Sanford[7] on the geographic distribution of ameobiasis, it can be stated with considerable certainty that this type of intestinal infection is endemic in the United States and that it is not necessary to assume that they are the result of close contact with soldiers or other persons with tropical infections.

The observations and experience gathered from the dysentery outbreak at Napa suggested to us that possibly a number of cases of infantile diarrhoea in San Francisco were actually true cases of infantile dysentery which had escaped detection on account of some unknown technical errors, which will be discussed later. Through the continuous and liberal assistance of Drs. Lucas, Porter and Cummings, our efforts to collect evidence to that effect were successful and enabled us to find two small dysentery epidemics in San Francisco, one in Pinole, California, and the indications of the existence of some sporadic bacillary dysentery infections.

The most important data concerning the few epidemics observed and studied bacteriologically are briefly as follows:

1. Family epidemic in San Francisco:

June 7, 1916, Dr. Porter informed the writer of two cases of infantile diarrhoea which were being treated at the Children's Hospital. Stool specimens were obtained and the bacteriologic results were as follows:

C. R., male, October 4, entered Children's Hospital with symptoms of diarrhoea:

(a) *Examination of stool:* Yellowish, creamy, pus-like feces with considerable amount of mucous, no blood. Microscopic examination showed numerous leucocytes, grampositive rods and spores, streptococci and diplococci, few gramnegative rods. The first bacteriologic examination showed a marked saccharolytic flora (62 per cent. gas in lactose broth) with predominance of the B. Welchii. As soon as the result in the second child was known, a second careful test for dysentery bacilli was made, and two colonies of B. paradysenteriae, Group II (Flexner) were isolated. The serum of this patient (fourteen days later, or three weeks after the onset of the disease) agglutinated the isolated bacillus in a dilution of 1:800 in four hours. Clinically, the course of the infection was severe. A second and a third stool examination on June 17th and 20th were negative for dysentery bacilli.

(b) N. R., female; developed a mild attack of diarrhoea two days following the first signs of gastro enteritis of the brother "C. R."

Examination of stool: The specimen obtained by rectal tubing consisted of a small flake of mucous tinged with blood. On litmuslactose plates about ten typical colonies of B. paradysenteriae Group II (Flexner) developed in twenty-four hours. Patient's serum, on June 17th, agglutinated several paradysentery bacilli in a dilution of 1:320 to 1:640. Stool examinations of June 17th and 20th were negative for dysentery bacilli.

(c) F. R., male; this patient was brought to the Outpatient Department of the University of California Hospital on account of acute diarrhoea.

Examination of stool: On June 14th and 19th stool specimens were obtained from the younger brother of the two patients mentioned above. On both occasions identical paradysentery bacilli were isolated.

(d) Mrs. R., the mother of these children, complained of frequent stools and abdominal pains. A stool examination on June 15th revealed also paradysentery bacilli which corresponded biochemically and sero logically with those obtained from her children.

It was impossible to determine in what manner the infection was introduced into this family. C. R. probably was responsible for the subsequent contact infections of F. R. and Mrs. R. Unfortunately, no specimens could be obtained from the father, a furniture mover, and the two older children. Neither of them showed clinical symptoms, according to the mother's statement.

Another contact infection of similar character, involving the two children of one family, was found through the service of the children's department of the University of California Hospital.

2. *Family epidemic in San Francisco:*

In August, 1916, Dr. Newell examined, under the writer's supervision, the stools of two children and isolated bacilli which we later identified as B. paradysenteriae Group II (Flexner).

(a) J. L.; male, two and one half years old, entered the Hospital on July 31st; had diarrhoea with pus, mucous and blood in the discharges. Temperature 39.9°. Blood culture was negative. On August 2nd paradysentery bacilli were isolated, equal numbers of B. coli and B. paradysenteriae were found on the dilution plates. Course severe, and complicated with secondary pneumonia and intoxication. The serum of this patient agglutinated the isolated paradysentery bacillus in a dilution of 1:640 and a stock culture of the Group II (Flexner) in a dilution of 1:80 to 1:160. A typical strain of Group I (Y-Group) was not agglutinated higher than 1:10.

(b) G. L., male, one and one-half years old, developed symptoms of diarrhoea and vomiting twenty-four hours later than K. L., his brother. On entrance into the hospital the discharges were greenish, mixed with mucous, and, according to the parents' statement, blood-containing.

The temperature, which was 39.8° on the patient's entrance, resumed a normal level the following day. Blood cultures were negative.

Stool examinations on August 2nd and 5th showed paradysentery bacilli mixed with equal numbers of staphylococci and coli organisms. The course of the disease was very mild.

The only agglutination test made on August 15th with the patient's serum gave a positive result with various paradysentery strains, but not with the typhoid and dysentery bacillus Shiga. In these two cases also the nature of a small family epidemic due to the B. paradysenteriae Group II (Flexner) is proven by the bacteriologic findings. Unfortunately we could not determine the source of infection, and it is uncertain whether the older boy, K. L., transmitted the organism to his brother, or whether both children contracted the infection simultaneously from the same source. It is to be regretted that no bacteriologic examinations of the intestinal contents of the parents and of other relatives were possible.

3. *Epidemic in Pinole, California:*

On September 27, 1916, Dr. J. G. Cummings, of the Bureau of Communicable Diseases, brought to our laboratory specimens of stools obtained from two adults suffering from acute gastro-enteritis. The two patients belonged to a small epidemic of eighteen cases of dysentery which occurred in Pinole. An incomplete investigation revealed that probably the drinking supply was temporarily contaminated by street-surface water which ran into the spring water.

The bacteriologic examinations of one specimen of stool (S) showed the presence of B. paradysenteriae Group II (Flexner).

Naturally, it is impossible to state with certainty that the epidemic of diarrhoea which occurred in Pinole was actually caused by paradysentery bacilli. In the light of the observations at Napa, San Francisco, and numerous other localities also, in the southern part of the State, it is not unlikely that the Flexner type of paradysentery bacillus was the causative factor in this outbreak. In this connection it is well to call attention to the urgent need of careful bacteriologic examinations in such outbreaks, because our knowledge concerning paradysentery infections and the manner in which these epidemics spread, is still based on very meager data.

Dr. Sawyer called my attention also to an outbreak of dysentery in the prisons of this State, but thus far we have not received material for examination. To date the most constant findings of paradysentery bacilli in this State have been made during epidemics, but it is erroneous to suppose that such a condition is the rule. A few observations suggest that also in sporadic cases of infantile diarrhoea these organisms can be etiologic agents, and some incomplete observations also indicate that in adults acute or chronic dysentery infections in California are due to paradysentery strains. The following observations support this contention:

4. *Sporadic or endemic cases of paradysentery infections:*

(a) Stool specimens from child "C", treated at the Children's Hospital in October, 1916; two bacteriologic examinations demonstrated the presence of B. paradysenteriae Group III. No serum tests were possible.

(b) Stool specimens of child "H. H.," treated at the Children's Hospital in October, 1916; one bacteriologic examination showed non lactose fermenting dysenteriae bacilli which resembled those of Group III. A detailed study suggests, however, that the isolated bacteria belong in the separate group of the paradysenteriae organisms.

(c) Dr. Geiger, of the Bureau of Communicable Diseases, told the writer that he isolated a paradysentery bacillus of Group I (Y-type) from the stool specimens of an elderly woman suffering from chronic diarrhoea and being treated in Oakland.

From the above cited observations, which by no means represent the results of a systematic inquiry, but rather the outcome of casual observations, we obtained the impression that bacillary dysentery is a fairly constant and frequent infection in California. At present it is, naturally, impossible to state in figures the possible frequency of the disease. The clinical diagnosis: "dysentery," is so rarely made that the morbitity and mortality statistics give an inaccurate account of the existing conditions. With the exception of the epidemic in Napa, and possibly that in Pinole, the transmission of the infection took place in the form of a direct infection, from person to person. In the light of these facts it appears proper to assume that in the surroundings of these contact cases chronic "carriers" existed, which disseminated dysentery bacilli. Through recent studies of Rumpel [9], Fränkel [9], Gettings [10], Verzare and Weszeczky [11] and many others, such carriers are not uncommon in paradysentery because the infection has a great tendency to run a mild, chronic course and is thus conducive to the "carrier state.".

The supposition that some cases of chronic

colitis are in reality chronic dysentery infections, is justified by some recent observations of Sonne [12] in Denmark who could trace several family infections to relatives suffering from chronic intestinal disorders. Repeated stool examinations as a rule give negative results, and only during exacerbations—after the patient has had one or several severe attacks of diarrhoea—can dysentery bacilli be isolated. In most of the cases these chronic carriers are probably a source of infection only during or after these attacks. An examination of their intestinal flora will frequently be made at a time when no organisms are eliminated or by methods which fail to demonstrate dysentery organisms, thus these patients escape detection. Such carriers are, in all probability, responsible also for the water-born epidemics thus far observed in this State.

Valuable information as to the extent and frequency of such dysentery infections could be collected if bacteriologic stool examinations of sporadic cases of diarrhoea would be conducted more often than is at present the case. It is not unlikely that a large number of gastro-enteritides of acute or chronic natures are in reality true dysentery infections. Evidence to that effect has been collected by various English, German and Danish writers. These have been particularly emphasized by Sonne [12], who describes conditions similar to those in California. In this connection it is not intended to imply that all the cases of diarrhoea are due to paradysentery bacillus; this is particularly true for infantile or summer diarrhoeas in children. The studies of one of us during the year 1915 have shown that the stools of children suffering from gastro enteritis or cholera infantum contained no dysentery organisms. This failure may be in part due to the technique of examinations, or to the particular selection of cases. These negative findings are quite in contrast with the frequent demonstration of paradysentery bacilli in the few cases examined during 1916. From these studies we gained the impression that the conclusions of Ten Broeck [2] are correct. This worker, in his study of infantile diarrhoea in Boston during 1914, found that probably the majority of such cases develop on a B. dysenteriae basis. The causes of infantile diarrhoea in California are, therefore, similar—if not identical—to those in the Eastern States. Many cases of infantile diarrhoea are, in reality, true cases of infantile dysentery, and the term "Bacillary dysentery" should be frankly applied. So far only paradysentery, and no Shiga bacilli, have been found. The clinical course apparently indicates but rarely the nature of the infection; our observations correspond with those of Holt [13], namely, that either fatal cases or those with signs of severe intoxication are due to other organisms (Morgan's bacilli or streptococci) or our methods fail to demonstrate the presence of dysentery bacilli. The case of "C. R.," in the first family epidemic, is chosen to illustrate this point. The bacteriologic examinations of the stool of "C. R." pointed to a gas bacillus or B. Welchii diarrhoea; yet, paradysentery findings in the sister of this patient suggested a renewed study of the intestinal flora and proved the gas bacillus infection to be secondary to a true paradysentery infection. This latter diagnosis is also supported by the positive serologic findings. Clinically, the uncomplicated dysentery infection was mild; the superimposed gas bacillus infection, on the other hand, was, in our opinion, responsible for the severe course of the infection.

In some recent publications Ten Broeck [2] expressed the opinion that in all probability the B. Welchii is only a secondary invader in infantile diarrhoea. A perusal of the extensive literature on this subject, so ably presented by Simonds [14] in his monograph on B. Welchii, also gives the impression that this organism is only indirectly, casually related to diarrhoea.

How far streptococci are connected with infantile diarrhoea in this relation, it is difficult to say. We studied an infection in a child who apparently contracted the causative streptococcus from his grandmother suffering from chronic diarrhoea. Only one examination was made; it is therefore possible that the main causative organism was not isolated. B. enteritides infections may also at times show the clinical manifestations of dysentery, as *one of us* [15] was able to demonstrate.

Bacteriologic observations.

(a) Stool examinations:

Aside from these very suggestive observations which prompted the few remarks on the etiology of infantile diarrhoea in California, the bacteriologic findings are also interesting. Representatives of three different groups of paradysentery bacilli have been isolated. In the Napa epidemic, Group I, and in the two house epidemics and the case from Pinole, Group II, and in one sporadic case, Group III, a consideration of these facts is presented in the next paragraph.

It is in the interest of the clinician and health officer that a rapid diagnosis of cases of diarrhoea be made. In the diagnosis of dysentery the bacteriologist unfortunately has many difficulties to overcome. Cultivation of the organisms is more difficult than in the case of typhoid and cholera in which we can isolate the specific organisms from the blood or by proper enrichment media from the intestinal contents. In the case of cholera, other organisms than the vibrio receive a set-back in the intestines, so that together with the peptone enriching fluid nearly one hundred per cent. of infections can be detected.

In dysentery infections, as a rule, the organisms are excreted intermittently, and two or several examinations of the feces are necessary. Our culture media, when not properly prepared, inhibit the growth of these organisms. Proper reactions of the media are absolutely essential. Conditions and substances which suppress the growth of B. coli generally hinder also the outgrowth of B. dysenteriae (malachite green, brilliant green, etc.). At the present time we are investigating the best composition of the culture media, in an attempt to find a substratum in which an enrichment of the organisms can be obtained. Very promising results have been obtained with agar media containing definite amounts of peptic or tryptic digests. As indicators of growth we used in several series lit-

No. of Case	Source of Specimens	Clinical Data of the Patient	Number of Colonies Examined	Biochemical Reactions										Serological Reactions			Classified
				Dextrose Solution	Lactose	Saccharose	Maltose	Mannite	Galactose	Dextrine	Rhamnose	Litmus Whey	Indol Production	Immune Serum Prepared with Strain of Group I (Y.- strains) 1:5000	Immune Serum prepared with strain of Group II (Flexner) 1:2000	Immune Serum prepared with strain B. dysenteriae (Shiga)	
1	Mokelumne Hill, Calif. Sept. 1916	Fatal Case	4 (numerous)	Acid	Normal	Normal	Normal or later slightly acid	Acid	Acid, later normal	Normal	Normal	Acid and then normal	+ - slight	5000 +	100-500	-	Group I (Y)
		Child, Acute Diarrhoea	2 (numerous)	Acid	Normal	Normal after some hours acid	Normal	Acid	Acid	Normal	Normal, or occasionally acid	Acid and then normal	+ - slight	5000	100-500	0	Group I (Y)
		Cholera Infantum Bay C. H.	2 (few)	Acid	Normal	Acid	Normal	Acid	Acid	Normal lag acid	Normal	Acid and then normal	-	50 - 500	1500-2000	0	Group II (Flexner)
4	Fatality epidemic in San Francisco, June 1916	Infantile diarrhoea Girl Bch.	4 (few)	Acid	Normal	Acid	Normal	Acid	Acid	Normal	Normal	Acid-Normal	+ -	50	1000	-	Group II (Flexner)
5		Infantile diarrhoea Boy Fr. L.	4 (few)	Acid	Normal	Acid	Normal	Acid	Acid	Normal	Normal	Acid-Normal	+ -	1 - 500	100	-	Group II (Flexner)
6		Acute mild diarrhoea Mother re. B.	2 (few)	Acid	Normal	Normal and later slight acid	Normal	Acid	Acid	Normal	Normal after some hours acid	Acid-Normal	+ -	500	1000	-	Group II (Flexner)
7	Fatality epidemic in San Francisco, Aug. 1916	Infantile diarrhoea F. L.	2 (numerous)	Acid	Normal	Acid after some time normal	Normal	Acid	Acid	Normal	Normal	Acid, later normal	+	500	500-1000	0	Group II (Flexner)
8		Infantile diarrhoea Bo. A. L.	2 (numerous)	Acid	Normal	Acid after some time normal	Normal	Acid	Acid	Normal	Normal	Acid, later normal	+ -	1 - 500	500-1000	0	Group II (Flexner)
9	Epidemic of 18 cases at Placerville, Sept. 1916	Acute diarrhoea, adult	2 (few)	Acid	Normal	Acid	Normal	Acid	Acid	Normal	Normal	Acid, later normal	+ -	1 - 50	2000	0	Group II (Flexner)
10	Sporadic cases	Infantile diarrhoea Girl Cur	2 (numerous)	Acid	Normal	Acid	Normal	Acid	Acid	Normal	Acid	Acid, later normal from formed acid	-	0	0	0	Group III (new)
11		Soldier returned from Honolulu	1 (numerous)	Acid	Normal	Acid	Normal	Acid	Acid	Normal	Normal	Acid, later normal	+	1 - 500	1000-2000	0	Group II (Flexner)

Routine examination of stool specimens for dysentery bacilli.

Stool specimen.

(best mucous flake)

Surface plating on litmus lactose or Congored agar (veal or Amino-acid agar).

blue or clear colonies, respectively, of gramnegative rods transplanted on agar slants or broth or peptone - solution.

Water of condensation.

Motile — Non-motile

Typhoid-paratyphoid group or Morgan's bacillus I.

Not fermented — 2% mannite peptone solution fermented

Dysentery Shiga group — Para-dysentery group

Subgroup I. (Y-type)

Glucose: acid only;

Lactose: not fermented

Maltose: (2.5%): irregular, ordinarily not fermented;

Saccharose: not fermented, often late acid;

Rhamnose: not fermented or slight acid;

Indol: traces (±)

Litmus whey: acid, then normal;

Agglutination of this organism by:

Serum of Subgroup I (Titer 1:10,000): 1:5000-10,000;

Serum of Subgroup II (" 1:5000) : 1:1000-5000;

Serum of Subgroup III (" 1:500) : 1:10 - 100;

Subgroup II. (Flexner type)

Glucose: acid only;

Lactose: not fermented;

Maltose (2.5%) negative and then acid;

Saccharose: negative;

Rhamnose: negative or slight acid;

Indol: traces (±)

Litmus-whey: acid and then normal;

Agglutination of this organism by:

Serum of Subgroup I: 1:2500

" of Subgroup II: 1:5000

" of Subgroup III: 1:50

Subgroup III (New group)

Glucose: acid only;

Lactose: not fermented;

Maltose (2.5%) : acid;

Saccharose: acid late;

Rhamnose: acid;

Indol: - (O)

Litmus-whey: acid, then normal;

Agglutination of this organism by:

Serum of Subgroup I : 0 - 1 : 50;

Serum of Subgroup II: 0 - 1 : 50;

Serum of Subgroup III: 1 : 500.

mus lactose solutions and recently also Congo red-lactose powder which is added to the liquified agar, producing a medium of remarkable differentiating properties. Endo-medium is unreliable, according to our experience, because several lots of agar exhibited marked inhibitive properties for the dysentery bacilli.

The isolated dysentery organisms which are recognized by their immobility are further diagnosed by fermentative reactions. For the true dysentery bacilli these reactions are usually stable and, together with the agglutination test, absolutely reliable. On the other hand, the fermentation reactions of the atoxic or paradysentery strains are not absolutely stable and may lead to fallacious conclusions. Through the studies of Hiss, Lentz and others, the fermentation of maltose and saccharose were considered of diagnostic value. Recent reports from the extensive epidemics in the War Zone show, however, the results to be so varied that no diagnosis and classification should be attempted on the basis of fermentation of the carbohydrates alone. Some information as to the position of the paradysentery bacilli in the varied groups can be obtained by using Rhamnose-broth and litmus whey. At least two groups can be recognized, according to Sonne [16]. As Hehewerth [17] points out, a good deal of confusion has hitherto been introduced into this subject by workers who rely on sugar reactions alone for the differentiation of the various species or who neglect these and base a classification solely on agglutination reactions. By the use of specific sera of the various groups, a classification is possible, in our experience, if one keeps in mind that co-agglutination and marked group agglutination are common occurrences among paradysentery organisms. For example, a serum produced with an organism of Group I (Y-type) coagglutinates the bacteria of Group II in fairly high dilutions, and again, a Group II (Flexner) serum clumps the organisms of Group I in dilutions which offer difficulties for interpretation.

The origin of the sera is here of importance. As a rule horse sera contain large amounts of normal agglutinins for the bacteria of Group II (Flexner). By absorption of this component, the difficulty may be overcome, but the process is very laborious for ordinary clinical use. Rabbit sera produced by only two or three injections of living organisms are more specific and, according to our studies, are really of great help.

Another obstacle in connection with the agglutination of the isolated bacteria is the phenomenon of para-agglutination which has received proper attention through the studies of Kuhn, Woithe and Gildemeister,[18] but has not as yet been considered in its full value in this country. By para-agglutination is meant that organisms closely related to the B. coli, and even streptococci obtained from the feces of dysentery patients, are agglutinated by a dysentery serum. Occasionally also, fecal organisms isolated from typhoid patients have been known to exhibit para-agglutinated properties. The susceptibility is lost after repeated subculturing. Such races of bacteria can be created by growing the same on media containing extracts of dysentery organisms. It is evident, in view of these facts, that certain errors may arise. It would not be of much practical moment, in an acute case, if a non-pathogenic bacillus were mistaken for the true cause of the disease, but it would be a grave error to stigmatize a person as a carrier who happened to be passing harmless para-agglutinable bacilli. Another pitfall is that para-agglutinable bacilli may be looked upon as the cause of any given bowel affection, whereas the true offender is one of the well-known pathogenic bacteria which has escaped detection. Mistakes of this kind have doubtless occurred in the past and may account for the large and ever-increasing number of different bacilli of the dysentery group which were supposed to cause the disease. Since para-agglutinable bacteria retain their power to ferment certain sugars intact, the necessity for supplementing the agglutination test with fermentation tests is quite evident.

The result of the bacteriologic examination depends on the laboratory worker and the uniform scheme which he is accustomed to follow. From a scientific viewpoint, particularly in connection with the problem of the pathogenesis of gall-bladder carriers, systemic blood cultures should also be made in paradysentery cases, because Ghon,[19] Frankel,[20] and Ten Broeck [21] and others have shown that in a few cases the dysentery organisms circulate in the blood.

In Table II we have given the method of isolation and identification of dysentery or paradysentery bacilli which, in our laboratory, has proven dependable and fully satisfactory even for very difficult cases (rabbit-carrier experiments).

By using the above technic we have thus far isolated three types of paradysentery bacilli, namely, the representatives of Group I, or Hiss-Y-Russel group in one epidemic; Group II, or Flexner group, in three epidemics; and two sporadic cases; and Group III in one sporadic case. The representatives of Group I and Group II are well known in this country; Group III, however, has only been recognized as important in paradysentery infections through the careful studies of Sonne,[16] Barthlein, and others. The characteristic, early rhamnose fermentation and the absence of co-agglutination with paradysentery sera of Groups I and II are of diagnostic value and identification. Until further specimens have been exaimned we cannot state the frequency nor the importance of these strains in the epidemiology of paradysentery. In the light of Sonne's statistical data, the representatives of Group III are more numerous in mild dysentery cases than those of Flexner and Hiss Groups.

(b) *Agglutination Tests:*

Testing the patient's serum with a known dysentery bacillus is an useful aid to diagnosis, but in this connection certain facts must be kept in mind. The numerous studies of Lentz, Sonne,[22] Ritchie,[23] and Frankel [20] have shown that the serum of a patient, infected or convalescent, agglutinates the B. dysenteriae Shiga-Kruse in a dilution higher than 1 : 50, but sometimes the same serum co-agglutinates the dysentery bacillus of Groups I and

II. On the other hand, the serum of patients with paradysentery never agglutinates the dysentery bacillus Shiga, a fact which was well apparent in our few observations; such sera agglutinate, however, the Y- and Flexner-types in the same dilutions, so that a differentiation in types is impossible. Only Castellani's absorption method will help, if properly carried out.

Far more important is the question, namely, in what dilution the serum agglutination is sufficient for a diagnosis of a paradysentery infection. As a result of extensive studies by many workers in recent years, the following dilutions can be considered as diagnostic. B. dysenteriae Shiga: complete agglutination in 1:64 dilution, and higher. B. paradysenteriae: agglutination in a dilution above 1:100 (1:128) is significant. Titers of the sera of females are uniformly higher than in males. Some investigators even state that the agglutination should be higher than 1:160.

In order to make the agglutination test absolutely reliable, it is necessary to test the patient's blood also against typhoid and paratyphoid. Only when the agglutination of the dysentery bacillus is markedly greater than that of the others, are we justified in making the diagnosis of para-dysentery. If this precaution is not taken, group agglutination of the dysentery bacillus—caused by a previous attack of typhoid fever or anti-typhoid inoculation —may not be detected, and lead to erroneous conclusions (Jacobitz).[24]

The above stated upper limits of agglutination of normal sera are naturally arbitrary and should be determined by each investigator for his own strains.

Sonne [22] points out that the agglutination test for paradysentery infections, due to organisms of Groups I and II, is not of much value unless a very high titer is obtained. He found that in typical cases the reactions ran as follows:

1	1:1000
1	1:250
2	1:100
1	1:50

On the other hand, the serum tests of patients infected with organisms of Group III gave positive reactions in eleven out of twelve specimens examined: (dilutions 1:10 to 1:250); 245 sera of individuals, not infected, never gave an agglutination in a dilution of 1:10.

Unfortunately, we were unable to verify some of these points discussed above, because the patients either escaped from our observations or refused to submit to the tests. From the few agglutination tests which we made in connection with the epidemiologic studies, we believe, however, that they are of value and should by all means be used in a search for carriers.

CONCLUSIONS.

(1) Paradysentery, caused by paradysentery bacilli of the Hiss-Y-Russel type (Group I), the Flexner type (Group II), and the new, well defined type (Group III, Sonne), exists in epidemic or endemic form in California.

(2) Infantile diarrhoea is, in some cases, due to paradysentery bacilli and should be frankly designated as "infantile dysentery."

(3) Bacteriologic stool and blood examinations, according to a definite working scheme, should be supplemented by agglutination tests of the patient's serum.

(4) To further our knowledge concerning the epidemiology of paradysentery in California, systematic stool examinations of acute and chronic cases of colitis should be made.*

Discussion.

Dr. B. Jablons: I am extremely indebted to Dr. Meyer because he has furnished the link in the diagnosis of several cases I have observed in the last two years.

He mentioned that there were cases of chronic colitis which were carriers and responsible for these epidemics. We had two such individuals from which we isolated what were supposed to be Flexner bacilli. One case was diagnosed as mucous colitis and had gone the rounds of physicians for several years. She had had intermittent attacks of diarrhea, with pain and general constitutional symptoms. On culturing her feces on one occasion, we isolated an organism which failed to ferment lactose.

I had no agglutinating serum at that time, but I have since been able to secure some through Dr. Meyer's courtesy. As far as I know, Dr. Meyer has succeeded in etsablishing at the Hooper Research, the only depot where one can obtain agglutinating sera for the varied microorganisms. We prepared a vaccine for this patient and she improved remarkably under vaccine treatment. When it was discontinued she would have a relapse, with diarrhoea, which at that time I considered an anaphylactic response to the bacteria she was still harboring, and finally, after a long period of immunization, she got well.

Incidentally I had occasion to discover two other such cases that had been diagnosed as chronic enteritis or colitis. In two other cases I studied we found the Bacillus fecalis alkaligenes. More recently I have read an article published by some French observers, who claim to have isolated this organism from the blood proving its pathogenic relationship.

We have used litmus lactose agar for a number of years, not because we felt that the inhibiting influence of the anilin dyes prevented growth of material, but simply because of the cheapness of litmus. I think we should be very grateful to Dr. Meyer and Miss Stickel for elaborating this media, and I intend to use it in the future, for I think it may point the way to the isolation of many other organisms.

With regard to the agglutination of Flexner bacilli, I had occasion to study an epidemic in Servia during the first Balkan war, and there we found, in attempting to carry out the Widal test, that it would be agglutinated by most sera in a dilution of 1:200.

I considered that this was possibly due to an earlier infection by the Flexner organism. We also used horse serum, and had the same experience as Dr. Meyer.

Dr Herbert Gunn: The difficulty in carrying out the examinations of the stool, which Dr. Meyer points out, is what has deterred most workers here from attempting it. It requires a trained bacteriologist, one who is absolutely familiar with all the details of the work, to carry it out successfully. The unfortunate part, from a practical standpoint, is that most bacillary dysenteries are

* The George Williams Hooper Foundation is very much interested in this disease and co-operation will be highly appreciated. Specimens should be sent to the following address: Dr. K. F. Meyer, The George Williams Hooper Foundation for Medical Research, Second and Parnassus avenues, San Francisco, California.

very acute; they may be severe, but are usually quite acute in their course. Most of these cases would be practically well, or dead, before the stool examination would point to the cause of the disease. In chronic cases or in an epidemic the isolation of the bacillus would prove of great value.

It is a well known fact that the agglutination, or Widal test, is rarely demonstrable until after a number of days have elapsed. In many British war zone districts, where bacillary and amebic dysenteries are present, they give immediately emetin, in the hope that the acute symptoms will abate in the amebic cases. That test is valueless in the chronic cases because emetin has so little immediate effect on the vegetative form of ameba, and almost none on the encysted form.

I had one patient to whom I gave one gr. of emetin a day for seventeen days, and on the seventeenth day the stool contained vegetative form. One dose of salvarsan at that time apparently affected his cure.

There is no question that cases of amebic dysentery originate in California; for years I have seen cases which have developed here. I have one patient at present with amebiasis who has never been out of the state and another who in all probability contracted the disease here. The amebic form of dysentery will be found much more frequently if sought for. Many of these cases of colitis can be demonstrated to be amebic if the stools are properly examined; some cases of so-called mucous colitis may also be cleared up.

Certainly, in all suspicious cases where amebae are not present, the stools should be examined for bacillary dysentery, and we will probably avail ourselves in future of Dr. Meyer's offer to help us out.

Dr. Meyer (closing discussions): In emetin-resistance of endamoeba histolytica the use of salvarsan is to be highly recommended. In our experience in the tropics the improper use of emetin frequently produces drug resistant strains, and in numerous instances of this character salvarsan has proven exceedingly effective.

We had at the University Hospital a case of dysentery with remarkable emetin resistance of the amoeba. Two doses cured the clinical symptoms, but failed to destroy the cysts. So far, oil of chenopodium—thus far used against hookworm infections—is the only medicament known which promises relief to amoebic cyst-carriers. The investigations in the war zone will furnish us with information concerning the value of this and other drugs for the cure of these potential carriers.

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THE SANITARY SERVICE OF WAR AND THE DEMOBILIZATION PERIOD.*

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At a previous period consideration was given to the examination of the individual soldier in times of peace. How much of this system will be held to in time of war will depend greatly upon the character of the war we may be engaged in; also upon the kind of military system that may be in force at that time.

If the conflict should be one of limited object or extent, such as the pacification of Mexico, armies of only moderate size will be required. If men are drawn by lot as contemplated in some of the plans for universal military service recruiting officers will be able to pick and choose as they please. Substandard men will not need to be considered at all. If the quota from a certain district is found to be unfit it will be necessary merely to requisition others to fill their places.

If, however, even in a limited conflict our present volunteer system is retained it may be necessary to let down the bars to a considerable extent. This will be deplorable both from the standpoint of its bearing upon the efficiency of our armies in the field and on account of the great increase in cost to the government in caring for an unnecessarily large number of disabled soldiers during and after campaigns; and in disability pensions.

In the event of our being engaged in a conflict of unlimited extent such as is going on now in Europe we will be required to draw into our armies the last ounce of possibly useful human material. Many having physical defects that would bar their enlistment in times of peace will have to be taken and duties commensurate with their physical abilities found for them somewhere in the great military machine.

Places will be found for those possessing such defects as incipient tuberculosis, heart disease of mild degree and hernias, in some of the multifarious duties connected with the supply or keeping of accounts and records of great armies in the field.

As to the effect of war conditions upon the course and incidence of tuberculosis reports are confusing. One report says that among soldiers at the front most of the tubercular cases are benefited by the outdoor life led by the men. Another that under the fearful hardships of trench life many new cases develop and incipient cases become active and even florid.

There is a great deal of tuberculosis in the armies in Europe according to reports from British and French authorities and much study is being devoted to the problem. It is evident that

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much of it as it exists in the British army in France may be explained by lax methods of examination. Until conscription was enforced men were so badly needed that the medical examination was not very searching. Consequently many doubtful cases were let through.

The situation confronting the British authorities at this time was, presumably, identical with the one we will be forced to meet in our next great war. And we can profit very largely by their experience.

With regard to the relationship of tuberculosis to war Osler has recently made the following observations:

1. In the majority of cases the germ enlists with the soldier. A few, a very few, catch the disease in infected billets or barracks. What percentage of men is infected is unknown but it is rare not to find traces of tuberculosis in men of enlistment age who have died from other causes.

2. Of one million enlisted men of aforesaid age the proportion to acquire tuberculosis is much smaller than if these men had remained in civil life. It will be possible later to work out the exact incidence for comparison, with figures already available; but it seems established that the circumstances of a soldier's life do not, as a rule, weaken but strengthen resistance.

3. Exposure to hardships in the field, injury, drink, syphilis, may bring about favoring conditions for bacilli that already exist or which may gain access to the patient and the soldier reports sick with tuberculosis of lungs, glands, pleura, bones or brain.

From a summing up of evidence as presented by these two diverse viewpoints it would seem to be a safe inference that to enlist doubtful cases on the supposition that they will eventually become hardened involves too great a risk.

Heart disease as affected by field conditions is another problem that has received a great deal of attention from the British authorities. They have attempted to conserve for military uses a good part of those individuals with compensating heart lesions who would be cast into the discard at a time when the need for men was less urgent. After the routine examination all cases with cardiac defects are placed in a group to be further examined by specialists. The finer methods of cardiac diagnosis are brought into use, the electrocardiograph, particularly, having been found of value in making the final decision. By the aid of such exact methods it has been found possible to divide the candidates into five classes. (1) General service at home and abroad. (2) Field service at home. (3) Garrison service. (4) Labor service or sedentary work. (5) Unfit for any army service.

In a previous paper your attention was invited to the observation of certain phases of mental instability as related to the examination of applicants for enlistment. It may be of interest to you to consider for a moment some of the effects of war conditions upon the mind and nervous system of combatants.

The influences that are brought to bear upon the minds and nerves of soldiers during campaigns are of divers character. They are by no means all of a depressing or damaging nature. There is a certain mental buoyancy and nerve energy noticeable in an army in the field, which is pitched far above the average tone of most of the individual soldiers going to make it up. Proof of this is seen in the expressions of ready humor and bursts of rollicking song so constantly to be observed among troops in the field when there is action, actual or imminent.

The constant tension, excitement and traumatic effect of nearby high explosives tend to nerve exhaustion and injury so that the neuro-psychoses are common. This may occur in individuals without hereditary taint, in which case recovery is prompt. Those with a psychopathic taint often show no will to recover and often intensify their symptoms through a conscious or subconscious wish to be sent away from the battle zone.

While considering the mental and physical vagaries of the human material with which our wartime activities will be concerned a brief allusion to the subject of malingering may be of interest to you.

Many army surgeons of experience and with a conscientious desire to see that the government is not imposed upon, acquire a certain reputation among the enlisted men of the command. They are said to treat every man who reports at sick call as a "beat" until proven otherwise. This attitude goes far to discourage men from reporting for medical treatment unless actually in need of it and certainly has its advantages. Sick call must not be allowed to become a popular institution. Soldiers must be encouraged to carry their minor physical troubles lightly; to disregard them as much as possible. On the other hand, harsh methods here may dissuade actually sick men from reporting for treatment; individuals may suffer and, conceivably, epidemics gain headway before recognition. Here, as elsewhere, good judgment and accumulated experience point to a middle course.

It is a mistake to assume that because a soldier is detected in an obvious overstatement of his case that he is a malingerer. Allowance must be made for his limitations in powers of expression and his natural desire to secure a hearing for his case with sympathy and treatment.

When all these allowances have been made, however, there are still many who attempt to evade military duty by malingering. To many soldiers in active service, harassed almost beyond endurance, a short stay in hospital offers a moment's respite from requirements almost beyond their power. There are many other motives for malingering but in every case there is the desire, conscious or subconscious, to gain some particular end through pretense of disease or injury.

The soldier, then, matches his wits against those of the medical officer. With some of them doubts will be raised in our minds to a sufficient extent to make us feel justified in excusing him from

some of his duties or even taking him in hospital for a short period of observation. The latter expedient should be adopted only as a last resort, for once in the hospital it is often difficult to dislodge him. The experienced eye can often recognize the malingerer at first appearance, by his surly mien, his caution in answering questions, his lack of definiteness and constant appearance of being on guard.

In its application to special cases the subject of malingering is far too broad to consider in the short time at our disposal. It was desired merely to call to your attention, by a few generalizations, its importance to the medical officer.

The effect of war conditions on the venereal rate is interesting to note. When enemy territory is occupied there is a marked derangement, often a paralysis of industrial conditions. Thousands of women who formerly earned a living by honest toil are no longer able to do so. Thousands of others who formerly lived comfortably, supported by male relatives, are deprived of this support and have no way of supporting themselves. As a result the volitional class of prostitutes is heavily augmented from among those who can find no other way of keeping alive.

Consequently we may expect and do find a great increase in venereal disease under these conditions. Statistics gathered from the European war zones show that these diseases have increased 50% since the war began and that the increase applies equally to the civilian and the military population. The number of ineffectives resulting among the troops is very large with a corresponding loss in fighting efficiency.

All this is in spite of modern methods of prophylaxis which are known to be highly efficient when properly applied. The question then becomes one of proper administration of known methods. And we know that certain of the countries from which reports have been received are models of administrative efficiency.

It is evident that the difficulty lies in the impossibility of a complete regulation of the myriad phases of the lives of men and women; of an oversight of their actions sufficiently searching to enforce proper treatment and prophylaxis among all of them.

At some time we will be forced to meet the same problem and our attitude toward it must be one of active, hopeful work along well known lines, with eyes open to its difficulties; not counseling perfection nor being downcast at failure to attain it. A great deal can be done and will be done and the many cases of disease that we will have on our hands, in spite of all our efforts, will not blind us to the fact that we would have many more but for our methods of prophylaxis.

Of the communicable diseases met with under field conditions there are a few which ordinarily give us little concern in times of peace but which take on major importance in active service. Of these cholera, typhus, typhoid, and the paratyphoids most deserve mention.

Many reports on methods of dealing with these diseases have recently been published and the main facts are doubtless familiar to you all. Certain points concerning them are worthy of special emphasis, however. Typhoid fever, we have seen, has practically disappeared under thorough immunization with vaccine. In the paratyphoids we have two diseases which still cause a considerable total morbidity, among those who have received antityphoid vaccine.

Extensive tests have been made in Europe with a quadruple vaccine containing typhoid, the two paratyphoids and cholera. The results reported are highly encouraging and seem to solve the problem in a satisfactory manner.

The diagnosis of these diseases in the field is made scientifically by bacteriological methods. For laboratory work in the field equipment is supplied that can be packed in chests loaded into wagons and transported from place to place with facility. This equipment is sufficiently complete for routine microscopical and culture work in bacteriology and ordinary chemical and water analysis and gives satisfactory results in the hands of workers experienced in adapting themselves to field conditions.

The problem in typhus is simple in theory but somewhat complicated in application. It consists, as you know, in isolation of existing cases and preventing access of lice to them and a general delousing of the soldier, his equipment and habitation and the application of the same process to the civilian population.

Many methods of removing lice from the clothing have been tried; chemicals are efficient but expensive. For instance to kill lice on the clothing of 28,000 men infested with lice and gathered together in one camp it was estimated would require four tons of bichlorid of mercury. Steam and sulphur disinfection are quite effective but each has its drawbacks. Steam requires an expensive apparatus and a highly trained personnel. It also ruins leather. Sulphur damages material and does not kill the eggs. For the disinfection of the person and clothing finely powdered napthaline is most effective.

The ubiquity of typhus is perhaps not appreciated by all of us. According to Goldberger of the Public Health Service it exists in endemic form in New York, Philadelphia, Atlanta, Milwaukee, Chicago and Boston. It is a disease of poverty, misery, filth and overcrowding and is usually seen only in the poorest parts of these cities.

It naturally follows that epidemics of this disease in time of war would not pass us by and that compulsory louse disinfection would have to be reckoned with and must enter into any scheme of sanitary preparedness.

The importance assumed by trench warfare in modern military operations has given rise to a number of sanitary problems, some of which may be considered new, others a reappearance of old ones under new conditions. Among these are poisoning by noxious gases, burns by inflammable liquids and gases, frost bite, trench nephritis, septic infection with fecal, tetanic and gas-forming bacteria and

the results of long continued nerve strain already briefly discussed.

The so-called frost bite is rather a special condition resulting from cold, wet and tight-fitting foot and leg wear. More than 10,000 men in the British Army alone were incapacitated from this cause last winter. It is best prevented by properly fitted and adjusted shoes and leggings and the wearing of a bag of thin oiled silk between two socks.

Septic conditions are exceedingly common, due to the all pervading filth; gangrene, probably identical with the old hospital gangrene of our civil war, has been very common. At least ten organisms, different but closely allied, all anaerobic and spore bearing having been identified as concerned with this process. They are doubtless present in the soil of the trenches.

Tetanus claimed many victims early in the war. Prophylactic doses of antitetanic serum employed in all shell wounds and other cases where there is a probability of great contamination have caused its virtual disappearance. Lacerated wounds and highly manured soils are the essential factors in the production of this disease.

Trench nephritis, otherwise called war nephritis, is a rather nebulous condition. It has been observed frequently in individuals who have never been to the front or in the trenches, such as hospital attendants and men of the transport and supply departments. Some observers maintain that it is merely a nephritic tendency aggravated by the strain and hardships of active service. The weight of opinion, however, is that most of the cases observed are secondary to infection of one kind or another in which the foci of infection are in some part of the body usually remote from the kidneys. Minor infections, such as boils and abscesses, are believed to be the cause of many of them.

Among the duties of the Medical Department in the field, the securing of an uncontaminated water supply is of primary importance. Often the difficulties encountered seem overwhelming. It frequently happens that troops on the march can find nothing but stagnant pools to secure their drinking water from. Since we have known that our worst camp diseases are due to microorganisms that are in part waterborne, the necessity for some simple and efficient means of rendering contaminated waters potable has been evident.

This can, of course, be attained by the simple process of boiling, which has been tried and found impracticable. Organizations arriving in camp after a long, hot march find it impossible to restrain their men from quenching their often terrific thirst with whatever water is at hand. The time taken to build fires, boil and cool the water is considerable. And, moreover, the boiled and partially cooled water is unpalatable and most soldiers prefer to take a chance on live disease germs to drinking it.

Many devices have been tried in the last few years to find a solution to this problem. Most of them had the ability to furnish a certain quantity of pure water, but in trials under service conditions demonstrated defects that rendered them impracticable. Certain fundamental faults were common to all of them and it seemed almost impossible to eliminate them. These were in general the necessity of transporting in the field a weighty and bulky impedimentum, a limited output of water, and in some types the necessity of providing fuel of some kind.

To be of any value to an army in the field any device for the purification of water must be of such a character that it can, under all circumstances, be carried into the field and be as close to the soldier as his canteen. Of what use to have pure water for nine days of a march and on the tenth day to find himself unavoidably ahead of his transportation, which carries his cumbersome sterilizers, and forced to drink bad water.

The Medical Department of our army believes it has solved this problem with the so-called hypochlorite method. A canvas bag of specially woven flax, twenty inches in diameter and twenty-eight inches in length has been devised which gives sufficient capacity to supply a company of infantry at war strength with a canteen full of water for each officer and man. The opening of the bag is sewn over a galvanized iron ring, hinged at one diameter which permits the bag to be folded. It is supported from a pole by two pieces of hemp rope about three feet long. The bag is fitted with five self-closing faucets just above the bottom seam, spaced at equal intervals. This container weighs between seven and eight pounds and can be folded up into a convenient and readily portable package; and not too large or heavy to be carried by one soldier over his infantry pack.

The sterilization of the water is carried out by adding 15 gms. of calcium hypochlorite to a bagful of water, about forty-six gallons. Sufficient of the chemical can be carried in sixty glass tubes to supply an infantry company at war strength with five canteens of water per man, daily, for twelve days. Such a package of tubes weighs ten ounces, is about six inches long and three inches wide.

Cholera, typhoid and colon bacilli are killed by this process in about five minutes. For ameba ten to fifteen minutes is required.

Since many surface waters carry considerable quantities of suspended matter, a piece of Scotch flannel (outing) has been provided for the purpose of rendering the water clearer. This is effected by placing the outing flannel over the top and filtering the water through it when filling the bag.

The presence of a proper amount of hypochlorite at all times is insured by the frequent application of the simple starch-iodine tests during the process of sterilization.

With so much difficulty in securing a supply of pure drinking water for troops in the field the necessity of avoiding waste or a consumption of water in excess of the bare needs of the soldier is evident. This can only be attained with disciplined troops and experienced officers, who know the minimum amount of water intake necessary to sustain the body during a march of a certain dis-

tance. The medical officer may be appealed to for expert advice as to this question and unless forewarned and prepared may be at a loss to give accurate and concise information to commanding officers.

The question of water supply on the march resolves itself into two parts: How much water can the body afford to lose? When and how often must this water be replaced? A man weighing one hundred and fifty pounds contains in his tissues about one hundred pounds of water. He cannot lose more than one-tenth of this, ten pounds or one gallon, without running serious risk of death. If he is in good training he can perhaps at the outside afford to lose seven and five-tenths pounds or six pints without intolerable suffering and loss of efficiency. If in poor training a loss of two and five-tenths pounds or two pints will probably produce both of these.

How much water will he lose in a march over a given distance? In a march of one mile over ordinary roads in heavy marching order the actual exertion demanded is about ninety gram calories. If the heat thus produced is to be dissipated by evaporation then for every mile 180 c.c. of water must be got rid of. In one hour's march, say three miles, allowing for ten minutes' halt, he will have lost a 540 c.c. or almost one pint. For the first mile, however, the heat produced will be utilized in raising his body temperature to the optimum for exercise, in common parlance "getting warmed up." Heat regulation will not therefore come into play until this distance has been covered. At the end of the first four miles he will have lost one pint, at the end of the seven miles he will have lost two pints, the limit of permissible loss for the partially trained soldier. In his case then it will be seen that he should be able to march seven miles, half of an ordinary day's march, without drinking. At the half-way halt he must have his first drink and after that regularly every hour of the march one pint of water. His water bottle contains a little less than two pints, so that having marched seven miles without drinking he should have a little less than a pint at the half-way halt, and the rest at the end of ten miles, after which he should be able to get home without further supply.

Suppose, however, that the soldier is in the best possible physical condition and able to endure the maximum permissible loss, six pints, he can therefore cover six times three miles, in addition to the preliminary one mile, without drinking, a total of nineteen miles. So it is safe to say that every soldier should be in condition to cover an ordinary day's march of fourteen miles without resource to his water can, if the roads be ordinarily good.

If the march be prolonged, up to twenty-five miles say, every man must have his pint or thereabouts every hour after his limit of endurance has been reached, whatever his original permissible limit of loss might be. In well disciplined organizations these results are attained by never allowing men to drink except at the word of command.

When wars are over and the demobilization of troops takes place many important duties devolve upon the Medical Department. One of the most important of these is the supervision of troops returning from the war zone to insure against contagion being carried therefrom to the civil population at home.

Disabled soldiers must be cared for and in many cases reeducated to make themselves self-supporting in some form of industry.

Matters of interest and value for compiling the medical history of the war must be gathered together and individual records of sickness and injury gone over to adjudicate pension claims.

The title of this paper, as you will note, includes many activities of the Medical Department in war that are not touched upon this afternoon. Most of these omissions are of topics taken up by others in past or coming papers.

IS ACUTE ANTERIOR POLIOMYELITIS SPREAD BY DIRECT PERSONAL CONTACT?

REPORT OF AN INTERESTING INCIDENT.

By J. C. GEIGER, M. D.,
Assistant Director, Bureau of Communicable Diseases, California State Board of Health.

In accordance with the long-established policy of the California State Board of Health to investigate intensively cases of acute anterior poliomyelitis, an investigation of two cases occurring in children living in Mill Valley, Marin County, California, was recently carried out. The records of the cases with the important data collected, mainly from the viewpoint of contagiousness through contact, should prove of interest to all students of the epidemiology of the disease.

Case No. 1. Name, M. P., age 4½ years. Dr. O. P. Stowe, physician in charge.

The history of the case is as follows: On Monday, November 27, this child was ill. There was some nausea and vomiting followed by restlessness that night. On Tuesday, November 28, the child was considerably better. On the morning of Wednesday, November 29, there was a return of the nausea and vomiting. There was some diarrhea. Temperature was evident. With some improvement of the general condition the child was allowed to attend a dancing school party that same afternoon in Mill Valley. On November 30 the patient was first seen by Dr. Stowe, mainly because of restlessness the night before and temperature which had been present. Dr. Stowe informed me that the child was nauseated, with some vomiting during Thursday. All physical signs with special reference to paralysis were negative. When seen again on Friday, December 1, the vomiting had ceased but a paralysis was noted of one-half of the tongue; the tongue being directed somewhat to

the left. There was also paralysis of the right side of the face. In the evening the paralysis of the right eyelid and side of face was very marked. There was no pain. In a telephone consultation with another physician living in San Francisco, the physicians agreed that there was some central involvement, but both were inclined to favor a diagnosis of tubercular meningitis. On Saturday, December 2, there was a paralysis of the left arm with much pain on movement. The child complained of pain when the tongue was handled and extended. The urine was negative. The throat was clear but the tonsils and the pharynx were exceedingly red. Temperature had ranged from 101 to 103.5. Dr. Stowe was advised to bring the child to San Francisco. He accordingly telephoned to St. Luke's Hospital for permission to enter the child there, and this being given, a late morning boat was taken. While on the way to San Francisco the patient asked for a glass of water. On attempting to drink some of the fluid, swallowing was evidently difficult and accompanied by much pain. There was considerable mucous flowing from the nose and mouth, the mucous being thick and ropy. Breathing at times was labored and hard.

At a consultation at St. Luke's Hospital, a diagnosis of acute anterior poliomyelitis was made. The child died at 5 o'clock that afternoon following a series of convulsions.

An autopsy was performed by Dr. G. Y. Rusk, Associate Professor, Department of Pathology, University of California. Frozen sections of the spinal cord taken through both enlargements and sections of the cord, medulla, and cortex fixed in alcohol and run through acetone showed in the cord characteristic alterations of anterior poliomyelitis. The same was shown in the medulla and in the cortical sections examined. There was a moderate infiltration also in a few perivascular spaces with exudate similar to that in the meninges.

Case No. 2. Name, J. C., age 2 years. On December 17 the baby was noticed to be ill. There was some fever but no nausea. There was some diarrhoea. The patient was very restless. She was seen by a physician on December 19 and 20. On the 19th it was noticed that the patient could not use the right arm. There seemed to be some pain and rigidity in the back of the neck. Dr. O. P. Stowe saw the child on December 21. There was some enlargement of the submaxillary glands but no pain on pressure. The throat was rather red. The baby would cry on handling and paralysis on the left side of the face and eyelid was plainly evident. The right arm could not be lifted and it was noted that the patient could not rest any weight on this arm. When seen on December 23, the paralysis of the left side of the face was plainly evident. There was some distinct involvement of the right arm, but as Dr. Stowe informed me not to such an extent as when he saw it two days before. The temperature was 99.5 by rectum and there was an exaggerated knee jerk on the right side. The parents informed me that the child was very much improved.

EPIDEMIOLOGY.

In going over the history of Case No. 1 it was ascertained that she was known to have been to San Francisco on a shopping tour with her mother a week or ten days previous to the illness. There was also a history of having played with a number of children in the playground of a large department store in San Francisco. There had been two social parties in Mill Valley to which this child had attended. There was one November 11 which was attended by a large majority of the citizens and children of Mill Valley and its vicinity. The second party, a dancing school, was attended by this child on the afternoon of the day on which she showed definite symptoms of acute anterior poliomyelitis. Various comments were made upon the paleness of the child and how badly she looked. Under these circumstances the child was handled and fondled more than usual by those present. In the party there were sixty-six other children, ranging in age from 2 to 14 years, fifty-six of whom were under 10 years and sixteen under 5. There is a distinct and definite history of this child having played with the majority, having danced with many and in some instances being kissed and fondled by the children present. There was no doubt that some used the same utensils, drinking glass, etc., along with this child. The room was not over 20 by 30 feet and there seemed to be an unusual crowd present.

Further investigation proved that in addition to the contact at the party a number of children visited the child at home and there played with her. No cases of acute anterior poliomyelitis had occurred in Mill Valley for several years, so undoubtedly this exposure constituted the first for many children present.

Accompanied by the Health Officer and Dr. Stowe each individual family was seen, the circumstances and symptom complex of the disease explained to them and their child or children placed into quarantine as contacts for a period of twenty days, according to the regulations of the California State Board of Health. One of these children came from Berkeley, two from San Francisco, and one from Sausalito. Every child known to be at the party was placed into quarantine as contacts accordingly, but the adults were allowed their freedom in every respect. In addition a letter sent to every family summarizing the above verbal instructions.

Case No. 2 was naturally exceedingly interesting because of the previous case that had occurred in Mill Valley. This family was of an entirely different social strata from the other case. They did not know the family in which the first case had occurred. They lived at least a mile to three-quarters of a mile apart. The water supply was the same as supplied to the city of Mill Valley. The mother does her own laundry on the premises. The milk supply was not in common. The contacts to the other case were not out of quarantine when this case came down.

These two cases are an interesting contrast; different social strata; no known knowledge of

each other; no possible contact with each other; no food supply in common, except water, which is the general supply, and no possible contact of the second case with the contacts of the first case. Flies can only be considered a negligible factor as they are not present at this period of the year.

Mill Valley was visited on different occasions during the period of quarantine and there was not one recorded instance in which the regulations put in force were violated. All the children remained remarkably well. The quarantine of the contacts of Case No. 1 was terminated on December 23, 1916, and there have been no further cases reported.

CONCLUSION.

Therefore taking everything into consideration relative to the sixty-six close contacts of Case No. 1, particularly their supposed susceptible ages with the subsequent negative clinical results and especially since, for the majority, it undoubtedly constituted a first exposure to the disease, there seems to be sufficient reason to doubt the accepted present-day theory of the spread of acute anterior poliomyelitis by direct personal contact.

THE FALLACY OF POST-VACCINATION TETANUS DUE TO VACCINE VIRUS.

By J. C. GEIGER, M. D.,
Assistant Director, Bureau of Communicable Diseases, California State Board of Health.

In a study of cases of tetanus following vaccination against smallpox, Elgin [1] plainly points out that tetanus is the most important complication of vaccination, and largely preventable. An investigation of a case of post-vaccination tetanus recently occurring in San Francisco should add emphasis to the need and importance of follow-up care in vaccinated persons.

The History of the Case: Name, E. C., age 6 years 10 months. San Francisco, Cal. Dr. N., physician in charge.

The child was vaccinated according to what is known as the cross-scarification method on July 23, 1916, by Dr. N. Dr. N. informed me that the arm was sterilized first by washing with soap and water, then with a weak solution of bichloride with the later use of alcohol and further cleansing of it by sterile water. This was the primary vaccination of the child. A vaccination shield was used over the fresh wound. This was then covered by a sterile bandage. The child was requested to come back for observation in five days. The reason for vaccination as given by Dr. N. and also by the parents was that the child intended to enter school at the beginning of the fall term, somewhere near July 28.

Result and Character of Vaccination: The patient was not seen again until two weeks after vaccination. There was no scab. The underclothes were adherent to the wound. Some parts of the original dressing, partly on and off, remained. This was very dirty and soiled. There was not much pus present. The area of inflammation around the wound was as large as a silver dollar. The wound was freshly cleansed and sterile dressings applied.

Date of Onset of Symptoms of Tetanus and Summary of Symptoms: When seen again, August 12, the arm was very much inflamed. The wound was again cleansed and sterile dressings applied. The parents were requested to bring the child back the following day. She was not seen until the evening of August 13. At this time there was some stiffness of the vaccinated arm as well as rigidity of the muscles of the neck. The temperature was 101 F. by mouth. It was impossible for the child to open its mouth even after urging. She was then sent to the French Hospital and the records of the hospital show she was admitted on the evening of August 13, 1916. That same evening, 3000 units of tetanus antitoxin was administered subcutaneously. This dose was repeated on the morning of August 14. Three thousand units of anti-toxin was administered on the evening of the same day and again repeated four hours later. The highest temperature recorded was 101.8 by rectum. Then the pulse ratio was 132, respiration 30. Other palliative treatment was used during the course of the disease. The child died early on the morning of August 15. The symptoms of the case were typical and a diagnosis of tetanus was justified.

Vaccine Virus: Dr. N. informed me that there had been vaccinated approximately fifteen to twenty other persons along with this child, including the sister of the patient. There was no history of illness of any kind whatever in those vaccinated except in the case under discussion. The same vaccine virus was used in all cases as far as the physician knew. A sample of the virus used in the vaccination of this child was obtained. Investigation of the laboratory records at the time of manufacture showed the vaccine to be free of contamination with tetanus. Thirty-three thousand five hundred and eighty vaccine points of this particular set of virus were shipped for distribution.

DISCUSSION.

The father of the patient works in a South San Francisco packing company as a fireman in the engine room. From the mother it was learned that the child was playing freely the day before the onset of the symptoms of tetanus, August 13. Pain in the neck was the first symptom noticed. There was a stable across the street from this house in which horses were kept. There was some manure scattered about the yard. The boy of the family in whose yard the stable was located played with the child quite often. There is a fairly reliable record of this child playing in the stable yard. As far as it could be learned, though not definitely ascertained, the scab was removed or knocked off of the wound two or three days before she became ill.

From the records of the French Hospital as well as personal communication from Dr. N. and the parents the onset of symptoms of tetanus in

this patient was undoubtedly August 13, twenty-one days after vaccination. This would probably indicate a late infection should one consider the vaccine virus the immediate and only cause. On the other hand, Anderson [2] has shown that in post-vaccination tetanus the average incubation period, measured from vaccination to the onset of symptoms is 20.7 days with the average mortality of 75.2%. This high mortality rate is similar to that in cases of tetanus with an incubation period of ten days or less. Therefore it is evident that if the onset of symptoms are more than ten days after vaccination, as in this patient, it is most probable and very possible that the infection was not received through the virus used in vaccination.

Summarizing the evidence gathered relative to this case, one could easily consider that the infection was due entirely to lack of care of the wound with a direct responsibility placed upon the parents of the child. The proximity of the stable is interesting. Therefore this case is a fair illustration of the fallacy of post-vaccination tetanus supposed to be due to direct contamination of the vaccine virus in its manufacture.

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2. "Post-Vaccination Tetanus, Studies on Its Relation to Vaccine Virus," by John F. Anderson, Director, Hygienic Laboratory, U. S. P. H. S. Reprint No. 289, Public Health Reports, July 16, 1915.

DEATH DUE TO STATUS LYMPHATICUS FOLLOWING AN INJECTION OF DIPHTHERIA ANTITOXIN.

By WM. C. HASSLER, M. D., Health Officer, San Francisco.

On January 3, 1917, the San Francisco Department of Health was requested by the family physician of X. to administer a prophylactic dose of diphtheria antitoxin to Thomas X., age 7 years, who had been in contact with his sister who was at the time ill with diphtheria and who had been removed to the city's Isolation Hospital.

To comply with this request Sanitary Inspector Dr. C. of the Board of Health proceeded to the family residence of X., found Thomas to all appearances a normal, healthy child, and with the assistance of the mother, the inspector cleansed with warm water and soap the right scapular region of the boy's back, then painted the site of the injection with tincture of iodine and injected subcutaneously 1000 units of diphtheria antitoxin of a standard brand, the time of its potency guaranteed to November, 1917.

The sanitary inspector left the house some ten minutes after the injection. At the time of his leaving there were no symptoms of collapse. The child complained of pain at the site of the injection, and ten minutes later he was seized with violent cramps, had great difficulty of breathing and passed off in what the mother called a "severe convulsion."

A postmortem of the body was made by Dr. William Ophüls, Professor of Pathology in the Leland Stanford University Medical School, and the following were the necropsy findings:

Name, Thomas X. Age, 7 years. Died, January 3, 1917.

History: Died in 20 minutes after subcutaneous injection of 1000 units diphtheria antitoxin.

Examination: Strongly built, well nourished boy about 7 years. Plentiful, dark blonde hair; eyelid lashes, eyebrows darker. Marked cyanosis of face, neck, shoulders, upper part of arms and finger tips. Skin light, thin and few small freckles over nose. Cervicle lymph glands just palpable, also axillary and femoral glands. Teeth show two permanent incisors in upper jaw; large and widely separated permanent canines; four incisors in lower jaw. Teeth well preserved and kept. Large amount dark, venous blood in veins of neck. Moderate layer of subcutaneous fat; muscles well developed, natural color.

Peritoneum shows slight passive congestion, moist in character. Few drops of clear fluid in recto vesical pouch. Appendix long, twisted, otherwise normal. Considerable fat in omentum. Position of the abdominal organs is natural.

Lymph-glands in ligamentum gastro-colicum about the size of split peas. The glands of the mesentery are more definitely enlarged; about the size of small lima bean, light grayish red in color.

The chest wall is arched and symmetrical.

Diaphragm is attached at the level of the fifth rib on both sides. There is evidence of old adhesions between the anterior part of the right lung and sternum.

Thymus and Thyroid Glands: The thymus is attached to the anterior part of the right lung, which overlies it. It extends up in front of the trachea for a considerable distance, almost to the lower end of the thyroid gland. Dimensions 11.5 cm. by 6 cm. by 1 cm. Thyroid gland is of normal size and appearance.

Lungs: Both lungs are much inflated with air, and quite emphysematous at free margins, covering pericardium and thymus glands almost entirely. The left lung is excessively distended with air throughout. Marked cyanosis of bronchial tubes. The air does not escape as readily as usual from lung parenchyma. Posterior portions are much congested. There are no visible scars. Right pleura is entirely obliterated by easily broken adhesions. Right lung is similar to left.

Heart: There is about a tablespoonful of clear fluid in the pericardium. The left ventricle is in systole. The right is also collapsed. Heart contains small amount of fluid, dark, venous blood; no air. The pulmonary artery is filled with dark fluid blood; the blood is everywhere liquid and shows no sign of clotting. The heart-muscle on the right side thin and flabby. Left side normal thickness, pale, firm, slightly opaque. Valves normal save for a yellow spot on the large flap of the mitral. Aorta and coronaries normal.

Spleen: Normal in size; capsule wrinkled. Cut surface shows an enlargement of the Malpighian bodies measuring about 2 mm. in diameter.

Kidneys and Adrenals: The left adrenal shows bright yellow cortex, rather small, otherwise normal. Kidney is of normal size; capsule strips easily. The cortex shows normal markings, pelvis normal. Right adrenal and kidney same as left.

Stomach: Stomach contains a large amount of partly digested food, in which there is considerable curdled milk. Mucous membrane covered with thin layer of mucous. Shows distinct of lymph follicles; numerous, the largest one 2 mm. in diameter.

Pancreas: Normal.

Gall Bladder: Contains thin usual bile, otherwise normal. Bile duct patent.

Liver: Liver normal size, and surface shows passive congestion, otherwise normal.

Genitalia: Both testes in scrotum of normal

size. Penis well developed shows marked phimosis; impossible to push gland through opening in the very long prepuce.

Intestines: Duodenum contains some turbid mucus. The small intestines contain a considerable amount turbid, bile-stained mucus. Small amount of normal soft stool in cecum. The rest of large intestines contain small amount of mucus. Some liquid stool in sigmoid flexure. Mucous membrane of jejunum slightly swollen, of light cream color, evidently due to a beginning absorption of chyle. Peyer's patches in lower small intestine slightly swollen and congested. There are many small lymph glands at the mesenteric insertion. Considerable enlargement of the lymph follicles of Peyer's patches, especially well marked in the region of the ileo-cecal valves.

Lymph follicles all through the large intestines are numerous, enlarged; largest being 3 mm. in diameter. There is a polypus about 3 mm. long by 1½ cm. in diameter in the region of the splenic flexure.

Lymph Glands: Bronchial lymph-nodes grayish red color, size of small beans; there are a few slightly enlarged lymph nodes at hilus of the spleen. Glands in the mesentery of transverse colon enlarged moderately. There are a few very large glands in the mesentery in the region of the ileo-cecal valve.

Retroperitoneal and mediastinal glands not enlarged. There are large grayish glands in both submaxilliary regions. The glands in the lower part of the neck only moderately enlarged and there is a marked enlargement of them at the base of the tongue and moderate enlargement of them in the anterior wall of the pharynx.

Tonsils: Moderate size; uvula markedly edematous. Larynx and trachea show passive congestion.

Aorta: Aorta normal.

Brain: The longitudinal sinus is normal, contains some fluid blood. The pia mater shows marked passive congestion. The large blood vessels at the base of the brain are normal. The brain substance is moist; shows passive congestion.

Diagnosis: Pathological—Status Lymphaticus.

From the above it will be noted that the enlargement of the lymph-glands throughout the body was general together with a persistent and markedly enlarge thymus gland.

The cause of the sudden death is attributed to the condition of status lymphaticus in this boy, one among thousands, and which could not stand antitoxin.

It is interesting to note that on the day previous the sister of this boy, who was the active case, had received intravenously 20,000 units of the same antitoxin and on the following day in the same manner an additional dose of 10,000 units, and made a complete recovery.

This unfortunate case has not deterred the department's use of antitoxin, either as a curative or prophylactic measure, but it has brought its lesson, which may be of value to other Health Departments, not in the prevention of death in such cases, but the avoidance of criticism.

The Board of Health now requires:

First, the written consent of parent or guardian to administer antitoxin.

Second, the Sanitary Inspector must remain with the patient or the contacts not less than one hour after its administration.

TYPHUS FEVER IN CALIFORNIA.*

By JAMES G. CUMMING, M. D.,
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Typhus, typhoid and relapsing fever were not differentiated until in Ireland in 1829 a distinction was made clinically between typhus and relapsing fever, and it was eight years later that Gerhard defined the clinical and pathological differentiation between typhus and typhoid. The discovery of the spirilium of relapsing fever by Obermeier in 1868 and the typhoid bacillus by Eberth in 1880 definitely established the etiological differentiation between these two diseases and their non-identity with typhus fever.

During early civilization typhus fever was the predominant disease; whereas typhoid was of secondary prevalence. With the advancement of civilization, however, and the adoption of higher standards of personal hygiene, typhus has receded. On the other hand, with the growth of large cities and the resulting contamination of food and water supplies, typhoid has become pandemic.

Except under war conditions, epidemics of typhus are now rare, although the disease is endemic on the Great Plateau of Mexico, in parts of Ireland, France and Russia, in Algeria, Egypt, Hungary and certain provinces of the Balkan States. As a result of war conditions the recent Servian epidemic, which for a time claimed as many as five hundred lives per day, is still fresh in our minds.

The three chief visitations of this disease to the United States were in New York in 1881 and 1882, and again in 1892 and 1893, and in Philadelphia in 1883. Sporadic cases have not been uncommon at our seaports. Furthermore, it has been recently shown that the symptom-complex known as Brill's disease is in reality typhus fever. In 1909 Dr. Nathan E. Brill reported two hundred cases of an acute infectious disease of unknown origin observed by him in the wards of the Mount Sinai Hospital. He had previously reported seventeen cases of the same disease. The important phases of the disease are summarized by Brill as follows:[1] "An acute infectious disease of unknown origin and of unknown pathology characterized by a short incubation period (four to five days), a period of continuous fever, accompanied by intense headache, apathy and prostration, and profuse and extensive erythematous maculo-papular eruption, all of about two weeks duration, whereupon the fever abruptly ceases either by crisis or by rapid lysis within three days, when all symptoms disappear."

When Brill's second paper appeared in 1910,

* Read before the Stanford Clinical Society, November 6, 1916.

Anderson and Goldberger of the United States Public Health Service had recently returned from the City of Mexico where they had been making a study of Mexican typhus or "tabardillo."[2] These investigators were impressed with the similarity between the disease described by Brill, and typhus fever as observed by them in Mexico. They were given the opportunity of drawing blood from a case of Brill's disease in the wards of the Mount Sinai Hospital. This was inoculated into monkeys. One of these animals, after an incubation of ten days, developed a fever which reached its maximum six days later and fell by rapid crisis fourteen days after the rise began.

To determine the relationship of Brill's symptom-complex to typhus fever, these workers tested the susceptibility of animals that had recovered from Brill's disease to Mexican typhus, and the converse of this. It was found that an attack of Brill's disease in the monkeys conferred immunity to Mexican typhus, and that Mexican typhus conferred immunity to an attack of Brill's disease. It was thus shown that Brill's disease, so-called, and typhus are identical.

Since the endemic typhus of New York, with which Brill worked, is of European origin, it may be concluded that the typhus fever of Europe and that of Mexico are identical.

Cases of continued fever of more than seven days' duration were studied from the records of the Massachusetts General Hospital, and from this investigation Roger Lee concluded that Boston and vicinity gave a ratio of one case of typhus to forty-seven of typhoid, a proportion probably present in most of the Eastern coast cities. Moreover, cases are reported as far west as Chicago and Milwaukee. There were thirty-six cases of typhus treated at the Mount Sinai Hospital and nineteen at the Jewish Hospital in 1912. With a more accurate identification of this disease it is evident that it has not disappeared from the United States, but, on the contrary, it has been present more or less continuously, especially in the large Eastern cities, since the epidemics of the eighties and nineties.

TRANSMISSIBILITY.

In the latter part of 1909, Nicolle infected an African ape with the blood drawn from a human case of typhus. Shortly after this announcement he reported the successful transmission of typhus from an ape to a monkey by the bite of the louse (pediculus vestimenti). From the epidemiologic conditions which prevailed in Tunis, he was able to rule out the flea and the bedbug as carrying agents. In February, 1910,[4] Anderson and Goldberger reported the transmission of typhus from a human case to a monkey by means of the body louse. Other experiments with fleas and bedbugs were negative and those with head lice—pediculus capitis—though suggestive, were not conclusive. During the same year Ricketts and Wilder transmitted typhus to a monkey by the bite of the body louse in two experiments. In one instance the virus was transmitted from man to monkey, in the other from monkey to monkey. Furthermore, these investigators infected a monkey with typhus through the introduction of the abdominal contents of infected lice through small incisions. The achievements of Nicolle and the confirmation of his findings by other workers have demonstrated the mode of transmission of typhus fever and made plain the practical methods of preventing the disease. These, when intelligently applied, have worked remarkable results. Thus, according to Nicolle, in 1909 there occurred in Tunis 838 cases of typhus fever, but in 1912, after the efforts to control the disease in the light of recent research had been put into effect, there occurred only 22 cases. The only prophylactic measure resorted to was the destruction of lice found on persons and their clothing in the vicinity of patients suffering from typhus. The successful campaign of the American Red Cross, under the leadership of Dr. Richard P. Strong against typhus among the Servian troops by the use of the crude oil bath and the steam sterilization of clothing is a remarkable achievement based primarily on the results of Nicolle's original investigations.

The theory that the body louse is the transmitter of typhus has received ready support from students of the epidemiology of this disease, for it presents the characteristics of an insect-borne disease. Typhus fever prevails in epidemic form only in overcrowded, filthy surroundings. To quote from Hirsch, "The history of typhus is the history of human wretchedness."

It is reported that in Mexico thousands are dying of typhus fever. The civil war in that country, with the accompanying wretchedness bordering on starvation, has led many of the inhabitants to emigrate to the United States. California has been free from typhus for years until the last four months, during which time there have occurred twenty-six cases, twenty-four of which we had the opportunity of investigating. Owing to the fact that all these, with the exception of one, were foreigners, it was difficult to obtain an accurate history of subjective symptoms. Furthermore, our chief work as representatives of the State Board of Health was to institute preventive measures.

In general it may be said that prodromal symptoms were absent or insignificant. In about half the cases the fever was ushered in by a chill. The rise in temperature was rapid, reaching its height about the third day. Mild delirium, muscular weakness and intense headache were early symptoms. With the rise in temperature, the face became flushed, the conjunctivæ became injected, and conjunctivitis developed later. There was no coryza or sore throat; there was hemorrhage from the nose and ears in only one case, and that late in the disease. A mild cough, moist bronchial rales, were not uncommon early symptoms. As the fever reached its height, there appeared within a couple of days the typhus rash, first on the abdomen, then on the chest, back, arms, thighs, forearms and legs. Within thirty-six hours it was fully out and remained until recovery or death. The spots vary in size, from 1/10 to 1/2 inch in diameter. They were irregular and had a fairly distinct outline but were not perceptibly elevated. The rash may be referred to as a mulberry rash during the first few days when it will disappear on pressure and

as a maculo-petechial rash when it becomes dark-brownish and does not disappear on pressure. As shown by Von Franckel, the characteristic exanthema is primarily a periarteritis which leads to stenosis and, by thrombosis formation, to circumscribed disturbances of the circulation, and to interstitial hemorrhages which convert the inflammatory roseola into petechia. The interstitial hemorrhages prevent the disappearance of the typhus spots on pressure.

The fever reaches its maximum in about three days, remaining elevated at 103° to 104° without marked morning remission for about fourteen days, at the end of which time it falls by crisis or rapid lysis. As stated by Dr. C. C. Pierce of the United States Public Health Service, "the most dependable symptoms are the rash, headache, bronchitis, mental confusion, dry coated tongue, nervous tremor and continuous fever." From eight of the cases investigated by the State Board of Health blood was drawn and injected into guinea pigs. As in two of the cases blood was drawn after the crisis, no temperature was produced in the animals inoculated from these. In the other six, the guinea pigs developed, at the end of an incubation period of ten to twelve days, a temperature which persisted for from four to twelve days. All the strains of typhus fever so isolated are now in the fourth generation.

The disease is not fatal in guinea pigs; an elevation of temperature and slight indisposition are the only signs of illness, and there are no distinct lesions such as we have noted in the spotted fever guinea pigs now in the eightieth generation at the State Hygienic Laboratory.

TYPHUS FEVER IN CALIFORNIA AMONG NEWLY ARRIVED MEXICANS.

The Mexican peons are said to be the only labor available at present for American railroad construction. Two employment agencies of Los Angeles furnish all the Mexican labor for the California railroads. After inspection by the United States Public Health authorities, the peons are recruited in El Paso, from whence, up to the time of the investigation by the State Board of Health, they were indiscriminately distributed in the various camps of the railroads. This method of distribution has been discontinued and in its place the following procedure has been established in accordance with the regulations adopted by the State Board of Health: When the peons, having passed the United States Public Health inspection, enter the employment of the railroad, they are sent, for the first fifteen days, to observation camps. These are isolated from other camps, and although the men are permitted to work within the section limits of such camps, they are thus placed in provisional quarantine for the fifteen-day incubation period, and are readily supervised from a medical standpoint.

All the twenty-six cases of typhus, with two exceptions, have been among newly arrived Mexicans or their families. All these laborers with four exceptions, developed the disease within seventeen days after departing from Mexico. Presumably then, the infection took place in their native country. Prior to our investigation the newly arriving Mexicans at the construction camps were infested with lice. The recent activities of the United States Public Health Service in inspecting all emigrant Mexicans upon entrance to the United States, has reduced this lousiness to a minimum. The inspection, however, of thirty-two peons who had been deloused at the border revealed the fact that at least two had body lice. Obviously, delousing at the border, if the emigrant is taken to a louse-infested camp, will not prevent re-infestion.

The first inspection of section camps by this Bureau during the week of September 18th showed that a large percentage of the men—especially recent arrivals—had body lice. Under such favorable conditions for the spread of the disease it was evident that louse eradicative measures were necessary. The recent arrival in the incubation stage would readily become infested and the delousing measures now instituted at the border would be robbed of their purpose. In order to put into immediate operation eradicative measures at all section camps, the following circular, initiative to the control and prevention of typhus fever, was issued on October 4th to the railroads operating in this state.

REGULATIONS OF THE CALIFORNIA STATE BOARD OF HEALTH FOR THE PREVENTION OF TYPHUS AMONG RAILROAD EMPLOYEES.

During the past six months every case of typhus fever reported in the State of California, with one exception, has occurred in railroad camps; in view of this fact the State Board of Health deems it advisable and hereby gives notice to all railroad companies operating in this state, that they must instruct the foremen of their section gangs (1) to carry out the following regulations; and (2) to supervise a repetition of a compliance therewith by every man, woman and child in the camp every seven days; and to report thereon once a week:

REGULATIONS.

First.—Have all bedding boiled. Have such as cannot be boiled removed from the bunkhouses into the open air and have it thoroughly shaken and brushed. This includes all clothing. Before returning any bedding whatsoever to the bunkhouses or living quarters, have all bunks and living quarters thoroughly swept and mopped with equal parts of coal oil and water.

Second.—Bathe the head and entire body with equal parts of coal oil and warm water. The coal oil and water to be thoroughly rubbed into the skin, especially over the hairy parts of the body. After the thorough rubbing, the coal oil may be removed by rubbing with a dry towel, or by taking a bath with warm water and soap.

Third.—After the coal oil bath, put on fresh clean clothing.

Fourth.—Boil all clothing as soon as removed from the person.

Fifth.—When the bathing is in progress have the shoes treated as follows: Dip them into gasoline until they are completely covered both inside and outside aud then allow them to drain and dry in the open air. In using gasoline, guard against fire at all times.

Sixth.—Wash down all toilets with coal oil, especially the seats and bowls.

Seventh.—All garbage and refuse should be stored in containers until properly disposed of by burning or by burying.

Eighth.—Every foreman must supervise the carrying out of these regulations throughout the camp every seven days.

Ninth.—All instances of illness must be immediately reported to the railroad physician and no case definitely diagnosed as typhus or simulating typhus shall be removed from the camp without authority from the county health officer.

REGULATIONS PERTAINING TO THE ESTABLISHMENT OF OBSERVATION CAMPS FOR MEXICANS NEWLY ARRIVED AND ON THE PAYROLL OF THE RAILROAD COMPANIES.

The eradication of the body-louse is imperative for the prevention of the spread of typhus fever. Owing to the great prevalence of typhus in Mexico at the present time and owing to the undisputed probability of infection among the Mexican emigrants prior to their entrance into the United States, it is necessary that one or more camps be established for the observation of such new arrivals for a period of fifteen days in each case and that these camps be established apart from all other floating or fixed camps.

All regulations hereinbefore mentioned in this circular apply in full force to these observation camps also.

All men in such observation camps are hereby not prevented from engaging in work for the railroad within the section limits of such observation camps during the period of observation.

REPORTING ON NEW ARRIVALS.

Each railroad company shall immediately report to the State Board of Health the names and location of all newly arrived Mexicans as soon as they are placed on the payrolls of the company.

There have been no new cases of typhus reported since October 2nd. Such a result in controlling the disease may be considered as due to the co-operation of the following factors: (1) The United States Public Health Service which has supervised the delousing and inspection of all emigrant Mexicans at El Paso, Eagle Pass, Laredo and Brownsville. (2) The railroads of the State which have established quarantine camps at various points under State Board of Health supervision for the detention of newly arrived Mexican labor in such camps until the period of incubation shall have ended. Also, their issuance of posters, explanatory of the state's delousing regulations printed in English and Spanish for distribution in all section camps, and their compliance with the state regulations regarding the delousing of all Mexican section labor camps. (3) The state-wide inspection, and in part reinspection, of railroad Mexican labor camps by the State Board of Health.

References.

1. American Journal Med. Science, Philadelphia and New York, 1910, xxxix, 484-502.
2. United States Public Health Reports, April 30, 1915, p. 1304.
3. Compt. Rend. Acad. des Sciences, vol. 149, July 12, 1909, p. 157.
4. United States Public Health Reports, Feb. 18, 1910.

INTESTINAL INFECTION IN THE SACRAMENTO VALLEY.*

By F. F. GUNDRUM, M. D., and NATHAN G. HALE, M. D., Sacramento, Cal.

During the past six years we have repeatedly heard the opinion expressed by medical practitioners in and about Sacramento that typhoid fever was less severe in the valley than it was in the eastern states. Various reasons have been assigned for this alleged peculiarity of the disease, such as climate, habitual quinine taking, so common along the rivers, infection during childhood and the efficacy of various methods of treatment. Upon taking over the medical service of the Sacramento County Hospital, we soon found that we did have a true typhoid infection of usual severity with hæmorrhages, perforations and all the major and minor complications of this disease. Our average yearly number of these was about 75. On the other hand, perhaps 60 patients a year were admitted who "looked like typhoid" yet whose later clinical course was very different from the classical typhoid fever. It seemed likely that a relatively high proportion of the milder intestinal infections might have some bearing upon the cases. For two or three years we had intended to undertake some sort of investigation of this problem. Unfortunately the opportunity did not come until 1915, during which year the City of Sacramento began chlorination of the river water, whereafter our yearly group of intestinal infections promptly dropped in numbers from the usual 100 to 150 to about 40, 37 of which we can present to you today. The method of investigation was a series of agglutination tests against seven of the common intestinal invaders, pure cultures of which were kindly supplied by the State Hygienic Laboratory at Berkeley. The organisms used were B. Typhosus: para typhoid A. 7; para typhoid B. Homo; colon; para colon; dysentery Shiga, and dysentery Flexner. The dilution of the serum was one in 40, the preparations were allowed to stand one hour. The microscopical method was used. Several sera for controls were obtained from patients suffering with various other diseases. These were used for the purpose of checking up our organisms.

Results: Of 37 patients who "looked like typhoid" upon admission 20 (54%) agglutinated the typhoid bacillus; 7 (19%) agglutinated para typhoid B. Homo; 1 (3%) para colon and 1 (3%) dysentery (Flexner); no blood agglutinated para typhoid A. 7, colon or dysentery (Shiga). There were 8 (21%) in which none of the 7 organisms were agglutinated. Controls in which no agglutination occurred were nephritis; alcoholic gastro enteritis, 2; pleurisy, 1; pneumonia, 1; tuberculous meningitis, 1; cancer of bowel, 1; acute alcoholism, 1. The different groups were analyzed and tabulated for some of the commoner typhoid difficulties; namely, duration, maximum

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temperature, maximum pulse, delirium, hemorrhage, perforation, rash, chills, and mortality.

Type	Duration days	Max. temperature	Max. pulse	Delirious	Haemorrhages	Perforation	Rash	Chills	Died
Typhoid	26.8	103	113	10%	15%	10%	50%	60%	10%
Para Typhoid B. (Homo)	14	102	107	0	0	0	28%	28%	
Para Colon	5	102	110	0	0	0	0	0	
Dysentery (Flexner)	7	102	110	0	0	0	0	0	
Dysentery (Shiga)	0	0	0	0	0	0	0	0	
Colon	0	0	0	0	0	0	0	0	
Para Typhoid	0	0	0	0	0	0	0	0	
None agglutinated	15	102	110	0	0	0	0	20%	

Dilution 1/40—1 hour.

CONCLUSIONS.

(1) Only a little more than half of our patients who came in "looking like a typhoid" gave an agglutination to the typhoid bacillus.

(2) Of this group the average duration of fever was 27 days, 40% were delirious, 15% had hemorrhage, 10% perforations, 50% rose spots and 10% died.

(3) 19% agglutinated para typhoid B. Homo.

(4) On this group duration of fever was 14 days, delirious none, hemorrhage none, perforation none, rash 28%.

(5) 3% (one case) agglutinated para colon and 3% dysentery of Flexner.

(6) 21% did not agglutinate any one of the seven organisms used.

(7) In this group duration was 15 days. There were no complications.

(8) Our "mild typhoids" were in about ½ the cases something else.

THREE CASES OF BERIBERI.

By ALFRED C. REED, M. D., San Francisco,
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Three cases of beriberi have been under observation recently in the Stanford medical service. These have been in no wise atypical but their occurrence shows that this disease is to be considered in California as well as in more endemic areas. There is no reason why it should not appear here if conditions of diet and hygiene are satisfactory for its development.

Case I.—(The first two cases have been reported in detail in the *Journal of the American Medical Association* (Jan. 13, 1917), and abstracts only are included here.) Lung Foo Sing, a Chinese man of 42 years, complained of tiredness and numbness of the legs. The condition was of gradual onset, progressive and first noted some six months before. Family history was unimportant. There were no symptoms referable to the respiratory, circulatory or gastro-intestinal systems, nor was there history or evidence of venereal infection. He had been in the United States for thirteen years, having visited China for more than a year just before the onset of symptoms.

Examination showed a slight cardiac irregularity after exercise, a slight pre-tibial edema, and numbness of both legs below the mid-thigh. A definite but mild peripheral neuritis was demonstrable. The diagnosis rested on the above findings, combined with an absence of fever, albuminuria and other cause for the polyneuritis. He had been exposed to beriberic conditions and his improvement was steady on a proper diet and an iron tonic. A silent tuberculosis could not be positively ruled out but would not have accounted for the full clinical picture, even if present.

Case II.—K. Saito, a Japanese man of 44 years, had been a domestic in the United States for twelve years, with no return to the Orient. He complained of headache, palpitation, insomnia and digestive disturbance. He suffered from dental caries and pyorrhea, had some cardiac hypertrophy with no decompensation and a moderate arterio-sclerosis. Systolic blood pressure was 165 (Faught). There was a deep pre-tibial edema and well-marked peripheral neuritis. The blood picture was not unusual. The stool showed a heavy clonorchis infestation. In the urine was a slight trace of albumin. On examination of the spinal fluid, a suspicious increase of globulins was noted but after a provocative injection of arsenobenzol, the fluid was normal in globulins, cells and Wassermann reaction. The renal excretion of 'phthalein was 85%.

Here the cardiac findings, edema, lack of fever and decided albuminuria, and a polyneuritis, pointed to beriberi. The low grade nephritis, arterio-sclerosis and pyorrhea do not seem responsible for the major condition. This man like the former had been exposed to a beriberic diet without however leaving the United States. The clonorchis infection seemed to have no bearing on the clinical condition.

Case III.—Leong Kee, a Chinese man of 25 years, complained of atrophy and paralysis of all four extremities. He was born in Kum Ling, a village near Canton, China, where he spent the first fifteen years of his life. As a child he frequently suffered from abdominal pain, but this is a common heritage of all Chinese children and is not significant. He had no fever or acute illness. His father and mother both died when he was about five years old. The patient was the eighth of ten children, all of whom are living and well except one who died in infancy.

The patient never did any work in China as he was a student. His diet there was the ordinary one of the country, in which the staple was the usual yellow rice, which was not highly polished. At the age of 15 years he went to San Francisco where he clerked in a Chinese grocery, after several years spending two years at the same trade in San Jose. While nominally a groceryman, he was really a lottery collector. Returning to San Francisco he lived there until March, 1916, when he went to Alaska for employment in the construction of tin cans in a salmon cannery. There his diet was chiefly Chinese imported dry foods, and fresh fish. Once in two weeks he was allowed beef, pork or bacon. The main article of diet was Hongkong rice. He returned from Alaska in September, 1916. It was during the

Alaskan trip that the condition arose which brought him to the hospital.

His habits were not different from the average of his class. For four years he smoked opium excessively, breaking the habit on his return from Alaska in September, 1916. This was accomplished by a Chinese cure consisting of the decoction of the dried residue in opium pipes, which was drunk when the drug desire was strong upon him. The interpreter stated that he had the characteristic appearance which by the Chinese was associated with an opium habitue, namely, "emaciation and black lips." The patient had used alcohol to some extent, as Chinese and American wine and occasionally a drink of whisky. He had been drunk some three or four times. He smoked cigarettes constantly.

The present illness began in Alaska in the early part of August, 1916, with a progressive weakness of the legs and arms, which soon prevented him from working. He then began to have sharp, cramp-like pains in the extremities and much formication. On two separate occasions near the onset, he had decided swelling of the legs which each time lasted from two to three days. At times he suffered much from cardiac palpitation. The weakness and paralysis progressed until he was helpless and was brought to San Francisco in September, 1916.

Examination showed a very emaciated, thin, weak Chinese man, lying helpless in bed. His skin was dry. He had complete wrist and foot drop. The pupils were regular, the left a little larger than the right, and both reacted to light and accommodation. The eye motions were normal. The mucous membranes were pale. There was no deviation or tremor of the tongue. The teeth were in poor condition and subject to caries and pyorrhea. There was a pigmented line about four millimetres from the edge of the gums, which was not a lead line. The right chest was more prominent. The lungs were resonant and no rales appeared.

The apex of the heart was in the fourth left space just outside the mammilary line and 9.5 cm. from the meson. No dullness was found to the right of the sternum. There was a soft systolic murmur at the apex, not transmitted. The second sounds were clear. The pulse was regular, even after some exertion, of moderate tension and the vessel walls were palpable. The abdomen was somewhat distended and tympanitic. No organs or masses were palpable. The epitrochlear glands were palpable, as is common in this race.

Examination of the nervous system showed complete foot and wrist drop and anesthesia to touch and pain in the palms and below a point just above the knees. The Kernig sign was present. No stiffness of the neck was demonstrable. The muscles especially of the forearms and calves showed a decided atrophy. There was deep pain on pressure on the calves and arms. Patellar and Achilles jerks were absent. Temperature sense was not lost. There was a marked reaction of degeneration in the calf and peronei, and in the extensor muscles of the forearms.

The cause of the polyneuritis seemed to lie between alcohol, arsenic and beriberi. The first was hardly supported by the history and the second was excluded by the history. The finding of a right ventricular hypertrophy by the cardiograph, the definite exposure to beriberic conditions, the history of edema at the onset and the absence of a better explanation for the neuritis seemed to justify the diagnosis of beriberi.

The laboratory findings were as follows: Urine showed a faint trace of albumin, no sugar, indican present, a few leucocytes, no red cells, a few hyaline and an occasional granular cast. The blood contained 4,700,000 red cells, 80% hemoglobin by Haldane method, 8500 leucocytes of which 73% were polynuclear, 25% were lymphocytes and 2% were eosinophiles. The stools showed ova of trichocephalus and clonorchis. The Wassermann reaction was negative in both blood and spinal fluid, the latter having normal cytology and no increase of globulins.

All three of these cases showed decided improvement on an antiberiberic diet combined with hematinics and cardiac stimulation. The last is of no small importance as it is a clinical observation that the danger of acute failure of the heart is especially great in beriberi and this constitutes a common tremination of the disease.

Beriberi has come to be considered one of a group of food deficiency diseases, such as pellagra, rickets, scurvy, infantile and other forms of malnutrition. Hence it is evident that beriberi can arise under the greatest variety of conditions, and in fact it is reported from far northern countries as well as from the tropics. There is no inherent reason why it should not develop in California. Milled rice is not at all the only dietary which because of a lack of vitamines may eventuate in beriberi. In fact Draper (*Journal of Tropical Medicine and Hygiene*, April 15, 1916) has recently reported nine early cases out of a crew of fourteen men on a Norwegian bark touching at St. Helena. Several of these cases were so mild as to have passed unnoted perhaps except for the occurrence of two or three more severe cases. Here the victims had eaten very sparingly of rice and had an abundance of fresh vegetables. Thus it is seen that it is not always possible to demonstrate an evidently beriberic diet. In fact it is such instances which lend color to the parasitic theory of etiology of beriberi which is held especially by certain English writers. Thus in his annual report for the health department of Shanghai in 1914, Stanley, who is one of the most competent sanitarians in the Far East, says: "The cause of this disease (beriberi) remains under close observation, though up to the present wrapped in obscurity. The evidence preponderates in favor of the disease being an infective one having no direct relation to food but infective through body vermin." This view does not seem tenable in relation to the American and Dutch results in the East Indies and the Philippines but is mentioned to show the fact that the exact dietary causes can not always be exactly determined.

An interesting point has been noted frequently in connection with emetin to the effect that one prominent symptom of emetin poisoning seemed

to be a condition not to be distinguished clinically from acute beriberi. This observation has been made repeatedly. Also it has been observed that a beriberic condition was a not infrequent complication of bacillary dysentery as well as of amoebic dysentery. This raises a question which apparently is fully answered by J. Preston Maxwell from South China (*China Medical Journal,* July, 1915). Maxwell treated one of his own students for an intestinal amœbiasis with a course of emetin injections and during the course of the treatment the patient developed a well-marked peripheral neuritis which only gradually cleared up. After a considerable period, the same student suffered a second amœbic infection and again received a course of emetin, the dose and preparation used being identical with those of the former attack. But this time Maxwell put the patient on a rice-free anti-beriberic diet and no neuritis developed. It seems clear that emetin or dysentery may thus act as an exciting cause of acute beriberi in a person already subject to the proper vitamine deficiency.

According to Casimir Funk who named the group, there are probably several vitamines or rather a group of them, differing according to their various sources. It has become a practical problem to find an adequate source of vitamines so that a comparatively large dose may be administered in concentrated form. To this end Seidell (Public Health Reports, February 18, 1916), has reported such an extract prepared from brewer's yeast. Seidell's method was as follows: "To a large volume of clear autolyzed yeast filtrate is added fifty grams per litre of the colloidal hydrous aluminium silicate reagent as prepared by Professor Lloyd of Cincinnati for alkaloidal separations. The mixture is well shaken and allowed to stand for several hours, until the supernatant liquid is practically free from suspended solid." The liquid is siphoned off and the solid is again filtered, washed and evaporated to dryness. Seidell found that this material was fully efficient as a cure and as a preventive agent in the neuritis of pigeons induced by a polished rice diet. On the basis of doses found necessary in pigeons, the dose for an average man of sixty kilos would be about five grams per day, which is well within convenient limits of administration. Seidell points out that while there is every reason to believe that this concentrated preparation of yeast vitamine would have a preventive and curative effect in beriberi, it might not prove to be the particular vitamine adapted to the needs of pellagra or other deficiency disease. He says further, however, that the method of preparation is applicable to other raw products and he has already applied it to the potato.

350 Post Street.

THE PREVENTION OF QUARANTINABLE DISEASES ON THE BORDER AND AT PORTS OF EMBARKATION.*

By W. C. BILLINGS, M. D., Surgeon, U. S. Public Health Service. Chief Medical Officer, U. S. Immigration Service, Angel Island, Cal.

It was the original intention that another officer of the Public Health Service should prepare the paper for to-day, but, unfortunately for the pleasure of you gentlemen, since the arrangement was made, that officer has been ordered to El Paso. The title of this article had been selected and was sent to me by him. On looking at the title three things occurred to me, *1st,* that it might be of more interest to you if the talk was not limited to the strictly quarantinable diseases but was a little more comprehensive in character; *2nd,* the word "Border" seemed to be used as if there were but *one* border to the United States, whereas in preventing the entrance of quarantinable diseases there are four borders which must all be guarded; *3rd,* the name of this society—the "Medical Preparedness League." Certain words frequently assume a particular meaning in our minds, a meaning perhaps not literally correct but dependent upon the custom and association of the moment. Words at times have a certain vogue, as do many other things, and I suppose at present the word "preparedness" instantly brings to most of our minds something connected with *war*—it did to mine in this instance, and of a war in which many of our profession have gone to their death.

Records of medical warfare against disease are as old as any historical facts which are presented to us. From the time when the 13th and 14th chapters of Leviticus described the laws to be enforced against lepers down through the period when persons afflicted with certain contagious diseases were pushed out of the community in which they lived to shift for themselves as best they could; from the barbarous peoples in various lands who have made it a custom to destroy at birth physically unfit babies; to the present time when more humane efforts are employed, man has been continuously at war against those disease agencies which he has learned, as his education progressed, are a danger to himself and to his family. Military warfare is intermittent. Exhaustion, defeat, and change of viewpoint occasion its temporary cessation, but our medical enemies neither recognize exhaustion nor acknowledge defeat. If our defensive measures are relaxed for a moment they attack again and more insidiously and more invisibly than military enemies. They never pursue the enlightened policy of a declaration of war, and, before we know it they have out-generaled us, passed our outposts, found a weak point in our main line of defense and appear well organized and ready for extensive action in our very midst. The fact that we are always confronted with a relentless enemy who is ever ready to take advantage of a weak spot, and having gotten the advantage is heartless in the extent of his depredations, has brought most of the enlightened nations to realize that to repel these

* Read before the Medical Preparedness League, San Francisco, Cal., December 7, 1916.

assaults certain defenses must be erected and the sentries on duty must keep constantly on the "qui vive" to detect the first sign of attack. The efforts of our own government to defend the United States against disease may be said to have started with the inauguration, in 1798, of the Marine Hospital Service, the prototype of which is the Marine Hospital at Greenwich, England. While it is true that the foundation idea in the inauguration of the Marine Hospital Service was to further the cause of the infantile American Merchant Marine by extending medical aid and hospital treatment to sick sailors, at the same time the medical officers of these hospitals soon began to assume certain other functions necessitated by the growth of the country and the extension of federalization in the execution of its laws. The ultimate result of this is that at the present time the country is protected from foreign disease invasion by two systems of defense, one by its quarantine stations, and the other by its immigration stations. It is a very common error among those not entirely familiar with the subject to assume that the medical examinations performed at Immigration stations are part and parcel of the Quarantine Service. This idea is entirely erroneous, as the medical examination of arriving immigrants is necessitated by the provisions of the Immigration Law, which has no connection whatsoever with the Maritime Quarantine Laws of the country. The quarantinable diseases are six in number and of a very different type than, if I may coin an expression, we will speak of as the "immigration diseases." They are, speaking as a group, more severe, more startling, and, with one exception, of an epidemic tendency; while the "immigration diseases" are vastly more varied both in character, seriousness, and results. The quarantinable diseases are Smallpox, Yellow Fever, Cholera, Plague, Typhus Fever, and Leprosy, while the "immigration diseases" are placed in various groups by the Immigration Law of 1913.

The outmost vedettes in our system of defense are our consuls stationed in various parts of the world. These officials, in compliance with the quarantine law, issue bills of health to every vessel leaving their port for a United States port, and supplemental bills of health if their port chances to be a port of call of the vessel en route to this country after leaving its original port. They also supply to the Surgeon-General of the Public Health Service advanced information as to the activities of any of our medical enemies, provided epidemic disease of any form manifests itself within their jurisdiction, and they keep him informed as to the extent and progress of any such diseases.

Our outposts are such officers of the Public Health Service as are stationed in foreign ports and who are usually attached to our consulates at those ports. At present officers are stationed at Naples, Guayaquil, Hongkong, Amoy, Callao, Frontera, Guantanamo, Havana, Halifax, La Guaira, Lethbridge, Messina, Montreal, Progreso, Quebec, St. Johns, New Brunswick, Salina Cruz, Shanghai, Tampico, Tuxpam, Vera Cruz, Vancouver, Victoria, Winnipeg, and Yarmouth, besides those in the Philippine Islands, Porto Rico, Hawaii, and the Canal Zone. These officers keep the Surgeon-General in closer touch with medical matters occurring in their vicinity, give advice as to cargo and passengers, in some cases superintend disinfection of cargo manifested to the United States, examine embarking aliens, issue bills of health and cargo manifests, observe whether or not the vessel while in port conforms to port regulations governing the spread of disease, and, supposedly, allow nothing of a medical nature to escape their notice. The reports received by the Surgeon-General from these vedettes and outposts are immediately published in the Public Health Reports issued weekly and sent to every officer of the Public Health Service, no matter where stationed, to presidents, secretaries, and members of state boards of health, and to all other persons who are sufficiently interested in Public Health matters to request that their name be placed upon the mailing list. In this way, supplemented by telegraphic information sent from headquarters when necessary, to the particular section of our line of defense that may expect attack, are the officers on duty in this war kept en rapport with the strategy of our medical enemies. Our main defenses consist of the quarantine and immigration stations so located as to form a practically unbroken line stretched around the entire border of the continental United States.

It would be tiresome to mention by name each place where examinations of arrivals take place, but to summarize quickly, in order to give you a fairly definite idea of the extent of the defense, there are on the Atlantic and Gulf Coast 38 quarantine stations and 9 immigration stations—on the Pacific Coast 13 quarantine and 4 immigration stations, while stretching across the northern boundary from Halifax to Vancouver are 25 immigration stations, 17 of them on United States territory and 8 on Canadian soil. These latter are maintained under an agreement between the United States Department of Labor, under whose jurisdiction the Immigration Service is, and the Canadian transportation companies and are so situated for the mutual convenience of the parties mentioned and the aliens, in order that if it so happens that an alien must be deported he will have been saved the time and inconvenience of going from the seaport at which he arrived to the border, and the transportation company will save the haul. Across the southern boundary, including the Gulf, are 16 immigration stations.

It must not be understood that of this extensive number of stations, all are large, fully equipped plants, because at such places as receive only an occasional vessel there may be no quarantine plant whatever, but an officer of the Public Health Service, almost always an Acting Assistant Surgeon, is located there and with power, if necessary, to remand the vessel to the nearest fully equipped quarantine station, and likewise at many of the small ports of entry for immigrants—places where perhaps but few people are received during the year there may be but one immigration inspector and one Acting Assistant Surgeon—very

different indeed from the large well equipped immigrant hospitals such as Ellis Island and San Francisco, but still a link in our line of defense.

The Immigration Law enumerates certain types of medical enemies with which, for the protection of our people both from a medical and economic standpoint, it will specially deal and the regulations group these diseases into certain classes, not always absolute, but sufficiently definite to form a practical working basis. To illustrate, the law says that loathsome diseases shall be excluded. I know of no strictly medical classification or enumeration of loathsome diseases. Whether or not a disease is loathsome depends entirely upon the personal attitude of the observer, and that attitude may be largely influenced by his familiarity and association with the particular disease under observation—for instance, personally I consider an old, extensive scabies, scratch marked, probably infected and generally neglected, as loathsome in the extreme, but at the same time it is not within the meaning of the government's classification of loathsome disease as regards deportation of the person affected.

Section 2 of the Act approved February 20, 1907, provided "That the following classes of aliens shall be excluded from admission into the United States: All idiots, imbeciles, feeble-minded persons, epileptics, insane persons and persons who have been insane within five years previous; persons who have had two or more attacks of insanity at any time previously; persons afflicted with tuberculosis or with a loathsome or dangerous contagious disease; persons not comprehended within any of the foregoing excluded classes who are found to be and are certified by the examining surgeon as being mentally or physically defective, such mental or physical defect being of a nature which may affect the ability of such alien to earn a living." And Section 9 of the same law levies a fine of $100 against a transportation company for each and every case brought to our country except those falling within the last classifications mentioned, namely, with some disease liable to affect their ability to earn a living.

For the sake of simplicity and to promote efficiency in handling the arriving aliens, these diseases are grouped into Class A I, Class A II, Class B and Class C, and certain diseases of each class are enumerated as types to serve as a guide in decisions regarding diseases of a similar or allied nature. These classes with their types are: Class A I—Idiots, imbeciles, feeble-minded persons, epileptics and insane persons; Class A II —Loathsome contagious disease—Favus, ringworm of scalp, sycosis barbe, actinomycosis, blastomycosis, frambesia (yaws), mycetonia (Madura foot), leprosy, demonstrable syphilis in the active communicable stage, gonorrhea and soft chancre. Dangerous contagious disease—Tuberculosis, trachoma, filariasis, uncinariasis, amoebia infection, endemic haematuria (Bilharzia disease). The diseases in these two classes are mandatorily deportable under the law except at the discretion of the Secretary of Labor. The Immigration Law like all others, reads "at the discretion of the Secretary" and it sometimes, though comparatively infrequently, happens that there are very unusual circumstances surrounding a particular case due to which the alien is allowed to land for hospital treatment until cured. It might be inexact to say that these few cases present extenuating circumstances because as it is usually not one's own fault that he is ill or crippled there is nothing to extenuate, but rather there are sometimes humanitarian reasons which influence the decision to allow treatment—such, for instance, as all the members of a family being in this country except one child or perhaps an aged parent; or an alien presenting a disease which is very readily curable in a comparatively few days, as uncinariasis, and which is obviously not the type of dangerous contagious disease that the framers of the law had in mind but which nevertheless it seems necessary to include in this class. Class B—All diseases and physical disabilities that in the opinion of the medical officer will materially impair a person's capacity for self-maintenance. It is this class of diseases which led me earlier in this paper to speak of medical defense against economic enemies. This class is not dangerous from either the standpoint of contagion or heredity, but it may be very greatly so from the standpoint of municipal expense. It includes all defective and diseased conditions tending to call for institutional care or treatment, all conditions that are likely to need medical treatment for a more or less protracted period, all deformed or crippled children who will require unusual care during childhood or who are likely to become physically defective if they live to reach maturity, chronic or semi-chronic conditions of a serious nature, all of which, it is apparent, cannot be specifically mentioned but of which the following are types: hernia, heart disease, states of permanently defective nutrition and of marked defective skeletal or muscular development, arthritis and myositis, nervous affections, malignant new growths, Bright's disease, senility, varicose veins, serious defects of vision occasioned by other than refractive errors and certain cutaneous affections.

The diseases of this class cover, as you will readily see, almost the entire range of medicine and they are not, as are the Class A diseases, mandatorily deportable under the law. Each particular case certified by the medical officers is investigated upon its own merits, by a board of Immigration Inspectors who take into consideration all matters affecting the alien and determine whether or not his social or financial status, his particular occupation, his friends or family connections, etc., have a sufficient bearing on the individual case to render the chances of his becoming a public charge on the community in which he lives probable or remote. Two certificates might be worded identically alike by the medical officers—let us say "mitral regurgitation—affecting ability to earn a living." Upon investigation by the immigrant inspectors it might be found that one was rendered against a bookkeeper of good habits who had several brothers already in this country and who already had saved a few

hundred dollars; the other was rendered against a laborer—a man who could earn his living only by the most arduous physical work, who had come out alone with scarcely a dollar above his passage money and who had no friends or relatives here. Clearly, while both had exactly the same condition, the one would have a tremendous advantage over the other both as to probable length of life and ability to be self-supporting, and the one might fairly be given permission to land while the other would be deported.

Class C includes defective or diseased conditions which do not present, in the opinion of the medical officer, the requirements for certification under Class A or B. They are minor and unimportant affairs but are noted because it is desirable, for various reasons, to keep a record of them, and because the law says that the Public Health Officers shall bring to the attention of the Commissioner of Immigration "any and all" medical conditions noted by them.

How are these various conditions discovered and what defense, in the application of the Immigration Law, does San Francisco offer to the entrance of our disease enemies? I select San Francisco simply because it is more familiar, and therefore may be more interesting, to this particular gathering.

On the arrival of a ship from a foreign port (with the exception of Vancouver and Victoria, where the passengers are inspected by our own officers before embarkation), but let us because of the added interest say from an Oriental port, for that is where our disease enemies are usually massed in greatest numbers, a Public Health officer attached to the Medical Division of the Immigration Service at Angel Island boards the vessel as soon as she has been given pratique by the Quarantine Officer,—of whose work we shall speak later—and first consults with the ship's surgeon as to what sickness has occurred during the voyage, and examines his official sick-report, which report is made under oath. If this report shows the presence of any certifiable immigration disease occurring in any other than an American citizen, he requests, if in his opinion the condition warrants it, that the alien be taken to Angel Island either for further observation or hospital treatment. He then makes a careful visual inspection of all 1st cabin passengers—observing their color—gait—activity—mental state, evidence of oedema, and, in short, looks for any condition which would lead to a supposition that some bodily ill may be present. This inspection is generally made without the knowledge of the passenger, by circulating among them and scrutinizing each one. If leading symptoms are discovered the passenger is quietly talked to individually and perhaps a further examination made in his cabin. At any rate, the medical officer either comes to his conclusion on board, in which case he reports his findings to the Immigration Inspectors so that, if possible, the passenger will not be unnecessarily inconvenienced, or, failing this, requests that he be brought to Angel Island. This ends the 1st cabin inspection.

All of the 2nd class and steerage who are not American citizens, are brought to Angel Island and grouped in the different examining wards, according to sex. Every eyelid is turned in a search for trachoma, and in the case of the men each is stripped completely and carefully examined from the top of his head to the soles of his feet, including a rather unique little test of jumping a nine inch hurdle, in the effort to detect beriberi, of which disease, parenthetically, we have had some 32 cases in the last three years. With the women the lids are all turned and a very careful scrutiny made, including pulse and temperature, for anything suspicious, but they are not undressed unless some condition necessitating further examination is found, in which case they are prepared by the nurse for a regular physical. A specimen of fæces is obtained from each alien, both men and women, prepared and sent to the laboratory, and a microscopical search made for the ova of uncinaria.

Naturally we endeavor to make our defense against particular forms of attack strongest at those places where experience has taught us that that particular attack is most likely to occur, and that is why, for instance, that here we examine microscopically every 2nd class and steerage oriental for hookworm disease, because, knowing the extremely large percentage of infection existing in China and Japan, and also having learned that it is quite impossible to diagnose hookworm disease in orientals by their appearance, we must employ more stringent measures against this particular disease than they do, say, at Ellis Island, where the aliens arriving are not generally from heavily infected areas and are of a type in which leading symptoms of the disease can more readily be discerned. On the other hand, at Ellis Island, due to their experience with the number of mental defectives applying for admission their examination along this line is more searching than at San Francisco where it is the rarest kind of thing to find a feeble-minded, imbecilic, or insane oriental presenting himself for admission.

What, to summarize quickly, was the total result of the immigration defense measures along the line described at this port during the fiscal year 1915? 16,959 aliens were examined. Of this number 7,316 were brought from the ship to Angel Island for more extended examination, and of this latter number 1,080 were certified to the Commissioner of Immigration as presenting some mental or physical condition falling under the provisions of the Immigration Law. These certificates represented 128 different diseases or defects and ran the entire gamut from pterygium to epidemic cerebro-spinal meningitis. Some conditions were represented only once, as for instance chronic rheumatoid arthritis, and some, as uncinariasis, many times, there being 486 cases of this disease.

What was the sum total defense, as represented by the number of people actually debarred from entering the United States, provided by the entire immigration medical inspection at all stations in the country during the fiscal year 1915? and I

would remind you that during that year not one quarter the number of aliens applied for admission as did in 1914 or 1913. To be exact, in 1915 there were 326,700 applicants, in 1914 there were 1,218,480, and in 1913, 1,197,892. In fact, we must go back seventeen years to 1899, in which year there were 311,715, to find as small a number as applied in 1915.

During 1915 the actual debarments were idiots, imbeciles, feeble minded, epileptics or insane, 483; mental defects other than mentioned, 29; loathsome or dangerous contagious disease, 1613; physical defects affecting ability to earn a living, 926,—a grand total of 3,051 persons,—corresponding roughly to the number in a solid brigade of troops on a peace footing, and in the year previous, which we may call a normal year, there were 19,700 excluded for the causes mentioned, practically a full division,—the command of a Major General,—perhaps in this case General Undesirables.

We can, as we have, estimate the number of afflicted persons actually debarred, but who of us can possibly estimate the total devastation these disease enemies would have occasioned if they had penetrated both the outer weak defenses at ports of embarkation and the main line defenses of the border, north, east, south and west? Who can possibly estimate the number of feeble-minded progeny of these feeble-minded persons had they been admitted, who can estimate the eleemosynary expense of the descendants of these debarred epileptics, who can count the number of ultimately blind who would have contracted their original trachoma from some of those sent back,—who knows the number of future American children spared the horrors of inherited syphilis, or who cares to venture a guess as to the number of pustubes, ophthalmias, tubercular conditions and deformities which might have been, but will not be, because of the detection of—not strictly speaking "quarantinable"—but "immigration diseases" on the border?

The first paragraph in the "Quarantine Regulations," issued by the Surgeon General of the United States Public Health Service, is "For the purpose of these regulations the quarantinable diseases are cholera, yellow fever, small-pox, typhus fever, leprosy and plague," and it will be appreciated that, with this limited number of quarantinable enemies to deal with and our (in the main) definite knowledge as to their individual mode of attack, specific defense measures have been worked out against each disease and an outline of these measures will be briefly given.

Now our medical vedettes get into action because of the directions contained in par. 2 of the regulations which states that "Masters of vessels clearing from any foreign port, or from any port in the possessions of other dependencies of the United States for a port in the United States or its possessions of other dependencies, must obtain an original bill of health, in duplicate, signed by the proper officer or officers of the United States, as provided for by law * * *." These bills of health are issued by our consuls, except in those places where an officer of the Public Health Service is stationed, when they are issued by him. A bill of health contains a great amount of information and states among other things the name, nationality, rig, master, tonnage, and compartments of the vessel, the name of the medical officer if the vessel carries one, the number of officers, crew and passengers, the previous ports of call if any, the number of cases of sickness and the character of same during the last voyage, the number while the vessel was in port, the kind of trade the vessel is engaged in, the nature, sanitary history and condition of her cargo, the source and wholesomeness of the water and food supply, the sanitary history and health of the officers, crew and passengers with the sanitary history and condition of their effects, the location of the vessel while in port—as the wharf, open bay, or distance from shore, the time the vessel was in port and the character of communication with the shore, the sanitary condition of the port itself and its vicinity, the prevailing diseases at the port and the number of cases and deaths from the quarantinable diseases during the two weeks preceding the issuance of the bill of health.

It will be seen that, while these questions seem numerous enough, almost every one may have some very direct bearing upon one or more of the quarantinable diseases—for instance the wholesomeness of the food and water supply and the character of the cargo have a direct relationship with possible cholera, the location of the vessel while in port—whether or not directly alongside the wharf or fended off and with rat guards on all her lines has a direct bearing on plague, and the character of communication with the shore might help us in coming to a decision in regard to yellow fever or typhus.

Having started with this original bill of health the next defensive measure is a supplemental bill of health at each port of call, and in this connection the last portion of par. 3 of the regulations is as follows, "If a quarantinable disease has appeared on board the vessel after leaving the original port of departure, or other circumstances presumably render the vessel infected, the supplemental bill of health should be withheld until such measures have been taken as are necessary."

The regulations contain certain specific instructions to inspecting officers which, as they illuminate the value to be placed on their work I will quote.

1st. The officer issuing the bill of health shall satisfy himself, by inspection if necessary, that conditions certified to therein are true, and is authorized, in accordance with the law, to withhold the bill of health, or the supplemental bill of health, until he is satisfied that the vessel, the passengers, the crew, and the cargo have complied with all the quarantine laws and regulations of the United States."

2nd. "Inspection is required of

(a) All vessels from ports at which cholera, yellow fever, or plague in men or rodents prevail, or at which small-pox or typhus prevails in epi-

demic form, and at which a medical officer is detailed.

(b) All vessels carrying steerage passengers; but need only include the inspection of such passengers and their living apartments if sailing from a healthful port."

3rd. "Inspection of a vessel is such an examination of vessel, cargo, passengers, crew, personal effects of same, including examination of manifests and other papers, food and water supply, the ascertainment of its relations with the shore, the manner of loading and probabilities of invasion by rats and insects as will enable the inspecting officer to determine if these regulations have been complied with."

4th. "When an inspection is required it should be made by daylight as late as practicable before sailing. The vessel should be inspected before the passengers go aboard, the passengers just before embarkation, and the crew on deck, and no communication should be had with the vessel after such inspection, except by permission of the officer issuing the bill of health."

The regulations also provide that a vessel shall be mechanically clean, that all portions of the vessel which may have been infected by any communicable disease shall have been disinfected, that the air space, ventilation, food and water supply and hospital accommodations shall conform to the provisions of a certain Act of Congress, that street sweepings, city cleanings, or anything containing organic matter shall not be taken as ballast from any port, that bedding, soiled wearing apparel, upholstered furniture, rags and articles of similar nature coming from a district known to be infected with cholera, small-pox or typhus, shall be disinfected prior to shipment, that any article shipped from, or through, an infected place and which the examining officer has reason to believe infected shall be disinfected, that no person suffering from a quarantinable disease or from scarlet fever, measles, diphtheria, or *other communicable disease*, should be allowed to ship. In addition to all of the foregoing every steerage passenger is furnished with an inspection card conveying detailed personal information, is supposed to be inspected every day by the ship's surgeon who punches an appropriate place on the card at each inspection, and must be vaccinated during the first portion of the voyage—unless they show satisfactory evidence of having acquired immunity to small-pox by previous attack or successful vaccination within one year.

The measures outlined represent the ordinary defense measures of our outposts where no particular form of attack is anticipated—or, in other words, at uninfected ports—but there are special orders to execute in case of known danger from particular enemies. At ports where cholera prevails the orders are that special care should be taken in regard to water, food, and textile fabrics. The drinking water unless of known purity should be boiled and the food thoroughly cooked and protected against flies. The latrines of vessel must be so arranged that they, including their discharge pipes, can be kept mechanically clean, and unless unavoidable, vessels should not take water ballast from a source contaminated or suspected of contamination by cholera. When unavoidable, the facts must be noted on the bill of health. Unsalted meats, sausages, dressed poultry, fresh butter or cheese should not be shipped and the inspector must be satisfied that fresh fruits or vegetables cannot possibly have become contaminated. Textile fabrics (with certain exceptions) must be accompanied by a certificate of disinfection in accordance with specific regulations, and steerage passengers and crew from infected districts must be detained five days before embarkation, in suitable quarters located where there is no danger from infection.

SPECIAL ORDERS IN CASE THE ENEMY IS YELLOW FEVER.

Precaution should be taken to prevent the introduction of mosquitos (stegomya) on board the vessel. Water tanks, water buckets and other collections of water should be capped, screened or guarded in such a manner that they will not become breeding places, and mosquitoes should be destroyed if present aboard the vessel. With the exception of those immune to the disease no passenger or member of the crew who has been definitely exposed to infection of yellow fever should be allowed to embark for six days after such exposure.

SPECIAL ORDERS AGAINST ATTACKS BY PLAGUE.

At ports where either human or rodent plague prevails every precaution should be taken to prevent rats, fleas, or other vermin from getting aboard the vessel. The vessel should not lie directly against the dock, or any other place from which rats can get aboard, but should be fended off and all lines running ashore should be freshly tarred and provided with efficient rat-guards, and especial care should be exercised against rat infected lighters being placed alongside the ship. If the vessel docks all parts should be simultaneously fumigated to kill rats and vermin before sailing, and this procedure should be applied to a vessel arriving at a foreign port in transit to the United States, provided she has been at a plague infected port where the before mentioned conditions have not been fulfilled. Articles which are liable to harbor rats or rat fleas should not be shipped until they have been freed from such vermin by fumigation or have been kept in a rat proof place for 15 days prior to shipment. The nature of the merchandise and the place and method of stowing prior to shipment must be considered in determining its liability to be a rat or vermin carrier, thus, layers of hides, bags of grain, etc., so stowed as to be used as nesting place for rats, would be flea, and might be rat, carriers. Passengers and crew, if they have come from a house or locality known to be infected should not be allowed to embark for seven days after said exposure unless they are already immune by previous attack, or have taken prophylactic serum.

SPECIAL ORDERS IN CASE THE ENEMY IS SMALL-POX.

All steerage passengers and crew coming from

districts where small-pox is epidemic, should be vaccinated *before embarkation*, unless immune, or vaccinated within a year, and their baggage disinfected if necessary.

SPECIAL ORDERS IF THE ENEMY IS TYPHUS FEVER.

Steerage passengers and crew who have been exposed to the infection of typhus fever should not be allowed to embark for a period of at least twelve days after such exposure and until their baggage has been disinfected and the destruction of vermin assured.

SPECIAL ORDERS AGAINST LEPROSY ATTACK.

No alien who is a leper should be allowed to embark for the United States under any condition.

With the execution of the orders cited vedettes and outposts have furnished all of the defense which we may rely upon them for, but if, unfortunately, the enemy has managed to bewilder or deceive them, the line of approach to our main defenses, the quarantine stations, is still harassed by the opposition of persons who, while not actually enlisted upon either side, are still most heartily antagonistic to an enemy victory. These persons are represented by the Masters and Surgeons of vessels at sea and, in order that their opposition may be as effective as possible, they are furnished with instructions as to how to most effectually hamper the enemy—these instructions comprise information as to how to disinfect water-closets, forecastle, bilges and similar portions of the vessel; to maintain free ventilation and rigorous cleanliness during voyage, and measures to destroy rats, fleas, flies and mosquitoes; isolation of any one sick with a communicable disease, and the detail, if possible, of some one immune to the disease to care for him; reduction of communication with patient to an absolute minimum; disinfection of clothing, body linen and bedding of patients and nurse; disinfection of compartment occupied and its contents; the use of mosquito bars and destruction of mosquitoes and "wiggle tails" if the case be yellow fever or malaria; special measures to destroy rats and vermin if the case be plague; to destroy vermin if it be typhus; and to boil water, thoroughly cook food, and to immediately disinfect and throw overboard the discharges if the case be cholera, typhoid fever or dysentery; formulæ for disinfecting solutions of bichloride, carbolic and formalin, are provided and instructions given as to their use as well as the use of sulphur and pyrethrum powder.

With the arrival of the vessel at a United States port the enemy, if not checked by the obstacles already thrown in his way, becomes opposed to our main defense. Every ship from a foreign place (or any vessel with sickness on board) is, upon entering port, required by law to break out the yellow flag at the fore-peak. This signifies that she has not as yet passed quarantine and the law prohibits anybody except the quarantine officials to board the vessel as long as the flag flies, which it must do until the master is given pratique by the quarantine officer, which is done immediately upon completion of the inspection provided nothing of a suspicious nature is discovered and the vessel has complied with laws and regulations relating to the subject in hand. The quarantine officer on boarding the ship inspects the bill of health and clinical record of all cases treated during the voyage, the crew and passenger lists and manifests and, if necessary, the ship's log may be examined. The crew and passengers are mustered and examined and compared with the lists and manifests and any discrepancies investigated. The clinical thermometer is used in examining the personnel of vessels under suspicion. The freight manifest is examined to ascertain if articles requiring disinfection have had it and if the required certificate accompany them. To promote the accuracy of his work the quarantine officer when in the performance of his duty is authorized to take declarations and administer oaths in matters pertaining to the quarantine laws and regulations. If this inspection demonstrates that there is no quarantinable disease on board and no cargo of an infected nature, the master is given a statement that his vessel is granted pratique, the yellow flag is hauled down, and the vessel proceeds on her way, but on the other hand, if disease is discovered, what are the especial defense measures employed to check each specific enemy?

Before describing these, and to illustrate that we are not inclined to trust absolutely to the perfection of our defense, and prefer to prepare for emergencies, I will quote par. 67 and 68 of the regulations, which are as follows:

Par. 67. "After arrival at a quarantine station of a vessel carrying immigrants and upon which there has appeared during the last voyage a case of cholera, small-pox, typhus fever, or plague, and after quarantine measures provided by regulations of the Treasury Department have been enforced and the vessel given free pratique, it is hereby ordered that notification of the above-mentioned facts be transmitted by the quarantine officer to the commissioner of immigration at the port of arrival, who shall be requested to transmit, by mail or telegraph, to the State health authorities of the several states to which immigrants from said vessels are destined, the date of departure, route, number of immigrants, and the point of destination in the respective states of the immigrants from said vessel, together with the statement that said immigrants are from a vessel which has been subject to quarantine by reason of infectious disease, naming the disease. This information is furnished to state health officers for the purpose of enabling them to maintain such surveillance over the arriving immigrants as they may deem necessary."

Par. 68. "When a vessel arriving at quarantine has on board any of the communicable but non-quarantinable diseases, the quarantine officer shall promptly inform the local health authorities of the existence of such disease aboard and shall make every effort to furnish such notification in ample time, if possible, to permit of the case being seen by the local authorities before discharge from the vessel."

Suppose now, that the quarantine officer finds that our enemies have launched one particular

kind of attack against us, what is the specific defense for each of the particular forms in which it may occur? Added to the general measures against a vessel presenting a quarantinable disease, such as prohibiting communication with any place or person outside; dumping any form of ballast which contains organic refuse; removing the crew and disinfecting the vessel proper; daily night and morning inspection of detained persons; discharging no person from quarantine until the period of incubation has expired, etc., the specific defenses are as follows:

IN THE CASE OF CHOLERA.

Five days are considered the period of incubation; if the vessel carry persons from cholera infected ports a bacterial examination should be made of any cases of diarrhoea before granting pratique. (At the present moment, because of the rather extensive presence of cholera in Japan and China every steerage passenger arriving in San Francisco from the Orient is subjected to an examination of the feces, before release, to determine whether or not he is a cholera-carrier); if cholera has appeared on board, remove all passengers and all crew, save those necessary to care for her, and place the sick in hospital. Isolate suspects and segregate remainder in small groups; those believed to be especially capable of conveying infection must not enter the place of detention until bathed and furnished with non-infected clothing; water and food supply must be strictly guarded, to prevent contamination, and issued to each group separately; no fruit or uncooked vegetable permitted; prevent spread of infection through flies or other insect; disinfect dejecta of *all* persons in quarantine; discharge water supply of vessel, disinfect her water casks or tanks, thoroughly rinse and refill with boiled water; disinfect all baggage, all articles of cargo and all compartments that may have been exposed to infection; vessels arriving with water ballast presumably infected must return to sea under guard and discharge such ballast.

IN THE CASE OF YELLOW FEVER.

Six days shall be considered the period of incubation. Disembark sick, protected by mosquito netting, and transfer to place of isolation; disembark others and subject to observation for six days —those presenting a temperature of 37.6 being isolated in a screened apartment; moor ship at least 600 feet from inhabited shore; fumigate ship, if possible, before discharge of cargo, to destroy mosquitoes which shall be done by a complete and simultaneous fumigation of all parts of the vessel by sulphur dioxide gas 2% volume, two hours exposure. If sulphur is liable to injure cargo use pyrethrum powder or campho-phenol. If cargo must be discharged use immune persons for the work, or if non-immunes are employed place them under observation for six days from date of last possible exposure.

IN THE CASE OF PLAGUE.

Seven days shall be considered as the period of incubation. Disembark and isolate the sick; prevent rats getting ashore and on board as soon as possible—the cargo being partially or completely removed if necessary to render this process efficient; hold all persons under observation not less than five days, and seven if in the least suspicious; disinfect and render free from vermin all soiled linen, personal effects in use and belongings of passengers and crew; be absolutely sure that vessel is free from rats and vermin; destroy rats on all vessels engaged in trade with ports infected with plague at least every six months—using simultaneous fumigation with SO_2, 2% and six hours exposure if vessel is empty, and SO_2, 4% and twelve hours exposure if cargo is in place. (Since the issuance of the regulation quoted cyanide gas is being used for this purpose.)

IN THE CASE OF SMALLPOX.

Fourteen days shall be considered the period of incubation. Any personnel who have been actually exposed during the voyage must be vaccinated or detained in quarantine not less than 14 days for observation; if the sick have been properly isolated from the start of the disease, the vessel need not be quarantined further than the removal of the sick, the disinfection of all compartments, baggage and articles that have been exposed to infection; if proper precautions have not been taken, all who have been exposed will be detained unless they have had smallpox or been properly vaccinated within the year.

IN THE CASE OF LEPROSY.

No vessel arriving with leprosy on board will be granted pratique until the leper and his baggage have been removed to the quarantine station. No alien leper shall be landed in the United States, and shall be deported to the country whence he came at the expense of the steamship company or vessel which brought him here.

IN THE CASE OF TYPHUS FEVER.

Twelve days shall be considered the incubation period of this disease. Vessels in good sanitary condition, but having typhus fever on board which has been properly isolated, need not be quarantined further than the removal of the sick, the disinfection of compartments and their contents exposed to infection, and the destruction of vermin. If the case has not been isolated, or the disease has spread on board from person to person, the vessel will be quarantined, the sick removed and isolated, and those who have been exposed to infection detained under observation. Vessels in bad sanitary condition on which the disease has appeared will be thoroughly cleaned and disinfected, as will also all baggage that has been exposed to infection, in such a manner as to insure the destruction of vermin.

In view of the present conditions in Mexico, the amount of typhus fever prevailing there, and the desire of numerous Mexicans to enter the United States via our southern boundary, it seems that at the present minute the subject of the prevention of the spread of this disease is of nearer interest to us than that of any other of the quarantinable diseases. In this connection it will interest you to know that during the last eighteen months the

United States Public Health Service has established plants on the Texas border where baggage and effects may be disinfected and persons bathed to free them from body lice. Senior Surgeon C. C. Pierce, of the Public Health Service, who is now in charge of this work, says, among some rules recently published: "If a person infested with lice develops typhus fever he should be thoroughly disinfected, by having his hair clipped short and the body bathed with hot water and soap. All clothes should be boiled or destroyed by burning, care being taken that no lice that might be on the clothes escape." And "In order to rid a person's head of lice the hair should be soaked with a mixture of equal parts of kerosene oil and vinegar, covering the head with a towel for about one-half hour. The vinegar loosens the nits and the kerosene oil kills the adult lice. After one-half hour the head should be thoroughly washed with soap and water. Where the hair is very thick and where there are many lice more than one application of this remedy is necessary," and "in cases of children or men infested with head lice it is best to clip the hair and then wash the scalp with soap and water. This will be sufficient. The hair removed should be collected on a newspaper, rolled up and burned." Grubbs, in the Public Health Reports of October 20, 1916, recommends a rather more extensive method than this and uses a gasoline-soap spray and shower bath for the body and vacuum-cynanide process for the clothing and baggage, and in the British Medical Journal of June 19, 1915, may be found a short but comprehensive report entitled "An investigation of the best methods of destroying lice," by Kinloch.

At the present time we believe that the only agency for the transmission of typhus fever is the louse—particularly pediculi vestementi and possibly pediculi capitis. Body lice, or as sailors and soldiers call them, "seam-squirrels," live most of the time, and lay their eggs, on the clothes, but feed on the wearer. Their existence is comparatively short if deprived of food and warmth, and it takes their eggs about eight days to hatch out; therefore clothing frequently changed, and thoroughly laundered by boiling and ironing between changes, eliminates the danger of the body louse on one's person. A person sick with typhus cannot convey it if there are no lice about, and so, with this knowledge in our possession we can, if we care to be laconic, reduce the description of the quarantine measures against typhus fever to just four words—simply, no lice, no typhus.

This is an outline of how quarantinable and other diseases are prevented at ports of embarkation and on the borders—it is an outline of our defense against disease invasion—it shows briefly the state of our preparedness against medical assaults from foreign shores. The defense is not perfect—it might be improved upon, but such as it has it gives and no man can even begin to estimate the saving it occasions to our country, from a financial standpoint—the suffering it obviates from a physical standpoint and the mental sorrow and grief that are not, but might be, if these defenses do not hold out.

ACUTE POLIOMYELITIS WITH SPECIAL REFERENCE TO MYOCLONUS.*

By BERNARD OETTINGER, M. D., Long Beach, Cal.

The conception that infantile paralysis represents an inflammation of the anterior horns of the spinal cord gave place to one that other gray elements of this organ were also implicated and this view to the recognition of an infection involving the entire cerebrospinal axis. Hence some authorities now prefer the designation polioencephalomyelitis. Although this title is descriptively more correct, the older term poliomyelitis is herein employed because less unwieldy.

Beyond a better understanding of its pathology our clinical conception of infantile paralysis too, has grown. But one form, the spinal type, was recognized until most recent years. Only since 1911 have types been identified compatible with the idea of a general infection of brain and cord, (together with enveloping membranes), yet with varying dominant features relating to one or another unit of the cerebrospinal axis. This modern view has been the direct result of careful studies in recent epidemics but the knowledge so gained may be applied to sporadic cases. Here, too, infantile paralysis encountered as a seeming meningitis or encephalitis or in the guise of a profound general infection without paralysis, has usually been otherwise clinically designated. Recognition of the last group, the so-called abortive type, is of great import from the viewpoint of incidence alone, being estimated at from 15% to 60% of all cases in some late epidemics. Standard text books consider our added knowledge in so far, but not even these take cognizance of early motor phenomena in poliomyelitis which may present. The latter deserve comprehensive clinical study as an aid in the diagnosis of abortive cases and connotatively, perhaps, of the preparalytic stage of classic spinal types. Two case reports are herewith submitted in respect to diagnostic problems thus suggested.**

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* Read before the Long Beach Branch of the Los Angeles County Medical Society, November 24, 1916.

** Although Flexner and Noguchi identified the causal organism of infantile paralysis in 1913, a crux in diagnostic difficulties as regards sole reliance upon bacteriological findings, has lain in the inability to recognize the bacterium with ordinary laboratory equipment because of its infinitesimal size. Almost a decade previously Scandinavian investigators had isolated a diplococcus from tissues of fatal cases and produced characteristic paralysis with cultures thereof in injected animals. These findings however were, on the whole, not confirmed. The entire question has now been reopened by American observers. September 30th of this year, Mathers [1] reported finding a gram positive microorganism in brain and cord tissue and mesenteric lymph nodes obtained from fatal cases. Corroboration followed in work done under the Mayo Foundation [2] and from the Pathological Laboratories of the Cook County Hospital.[3] Nuzum and Herzog found the microorganism, a streptococcus, in the spinal fluid of eight out of nine cases and in a later report [5] in forty-five out of fifty cases. That this microorganism is either the carrier of the real ultra-microscopic virus or what is more probable that

Case 1. A girl aged four years is seen in consultation on the fourth day of illness in bed. For a week, while up and about, gastrointestinal symptoms have been present. In dorsal decubitis the patient lies with both legs slightly flexed. She cries when these are handled, resists their complete extension but later when asked to kick down the covers, she fully extends the lower limbs. She does not sit nor stand on request but when held upright, again holds both legs flexed with toes just touching the bed. The arms are used normally. The child whimpers a good deal. The psyche is not involved, her attention being frequently engaged to tell what she would like to eat, how she would like to take a ride, etc. There has been no vomiting, headache nor convulsions. A range of fever from 99½ to 101 has persisted since in bed. At this time the skin is clear. (A few days later a macular rash appeared on the chest.) Both pupils react to light; there is slight photophobia but the conjunctivae are not reddened. No cranial nerve paralysis. Marked stiffness of the neck presents and movement of the head is painful but neither at this time nor later was the latter drawn back. An occasional ralê can be heard in the left lower lobe. At my first visit the presence of the right abdominal reflex is doubtful and the right patellar reflex can just be elicited. Thereafter I can elicit neither abdominal nor patellar reflexes. There is some but not marked hyperaesthesia of the skin. With the patient's attention otherwise attracted, the soles of feet can be stroked without pain. The legs are not, and later did not become paralyzed.† On holding either leg in my hand, I experience slight rigidity, a condition entirely at variance with the traditional thought of flaccid or hypotonic musculature in infantile paralysis. With this occurs a peculiar fibrillary tremor under the fingers. Upon my second visit two days later the child seems not so bright. Otherwise the symptoms are as before with this further exception. A brief examination now excites the patient. She cries violently and directly shocklike jerks of the head and extremities recur at short intervals. The child continues to cry and its distress is impressive.

The following conditions were considered, viz.: acute rheumatism, osteomyelitis, meningitis (tuberculous or meningococcic) and poliomyelitis. Absence of redness and swelling and the fact that the joints were not involved ruled out acute rheumatism which condition would also have developed greater temperature. Palpation showed the epiphyses of the long bones not particularly tender which excluded osteomyelitis or epiphysitis due to other causes than septic infection. The fact that pain was not severe when the lower limbs were at rest spoke against all these conditions. A point noted was that all symptoms with the single exception of the neck stiffness referred to meningeal involvement of the lumbar region. Tuberculous meningitis might be excluded in the face of acute development of nervous symptoms yet absence of headache and vomiting. Also, because acute tuberculous meningitis is a basal affair some involvement of the cranial nerves would have been a likely occurrence. The same factors spoke against a meningococcic infection. Examination of the spinal fluid at the County Hospital definitely ruled out this entity. This procedure was denied us while the patient was at home, but the continued mental clarity, absence of cranial nerve involvement, localization of symptoms pointing to inflammation of the spinal meninges alone, together with the vanishing abdominal and patellar reflexes determined a diagnosis of acute poliomyelitis.

Case 2. A boy of 2½ years. A maternal grandmother died of osteomalacia. Father and mother well but the latter has an enlarged thyroid and slightly bulging eyes. Of the mother's family one brother died at 43 years of tuberculosis, one brother at 30 years of exophthalmic goitre, two sisters in infancy and three sisters and two brothers are living and said to be well. The mother is married seven years; no miscarriages. Two older children are well; these and the patient born at full term. All labors long and hard but accomplished without the use of instruments. During each pregnancy much vomiting up to and during parturition. Patient was well nourished at birth. The mother, who is intelligent, says that at three months the child had a fever; was fretful and restless. Soon after attacks passed through the body which would stiffen. When the spasm relaxed, the glottis opened and there was a crowing sigh. Following the spasm the left arm was held rigid for a time. After a few days a series of yet harder attacks of like character occurred. There was much sweating about the head. Now supervened short attacks in which the patient would lie very quietly, staring vacantly and then occurred quick jerking of the head and extremities. Following these paroxysms he could not be quieted for some time. At present he eats much and anything offered him. Bowels and bladder act normally.

Physical examination: The patient is in dorsal decubitus. The head in general is well shaped but the occiput is flat. The face is exceptionally handsome, the expression intelligent. It is said the child can speak a few words. The body is long; the legs and arms thin; the fingers noticeably slender but withal there is no emaciation. The

the easily visible coccus is the aerobic form and the ultramicroscopic bodies the anaerobic form of the same organism reflects, in general, conclusions held. Dixon,[4] however, states that studies undertaken by him in 1907 and 1910 resulted in finding this gram positive diplococcus in secretions from nose and throat and in culture from the spinal fluid in acute poliomyelitis cases. But the results of cultural injections of animals lead him to believe that although the constant presence of the diplococcus shows it has something to do with the causation of the disease and may be symbiotic in its relation to the principal agent, this germ is nevertheless not the chief etiological factor.

† However, after three weeks with the patient in dorsal decubitus there is, without paralysis, slight relaxation of the left peronei muscles.

skin is of good color, fine and without a blemish. The left ear is smaller and the left eye slightly lower than are the same on the right side. The left bony thorax is somewhat smaller than upon the opposite side. Exact measurements of arms and legs are not made but there is no marked difference in their length. Patellar reflexes present; Babinski positive (probably of no moment in this instance). Abdominal reflexes absent. No paralysis of cranial nerves or those of the extremities but the musculature in general is hypotonic. When placed in a sitting position and held, as the patient cannot sit up without support, the head is held erect but the spine in the lower dorsal region bows with a posterior convexity and the abdominal muscles bulge laterally. There is no titubation of the head. Resonance is found over the upper sternal region (absence of thymus?). Chest and abdomen negative. The testicles are undescended.

At a subsequent visit the following events were noted while the patient was sleeping in his basket. The eyes are opened and the bulbi moved slightly. Then the head, arms and legs jerk in quick sequence. The child awakes, cries, is restless and directly athetoid movements of one hand and then the other are noted. Some time elapses before the babe is quieted. These attacks are said to be frequent and always uniform.

A full discussion of this case would carry us too far afield from the subject in hand. Suffice it to say in passing that if we view the laryngismus stridulous, spasmophilia in general, the extreme body length and sternal resonance in the thymus region as evidence of probable thymic involvement, we note occurrence of abnormal ductless glands in three generations of this family. Even so, however, this may mean no more in the present instance than lessened resistance to an infection which certainly initiated the patient's illness. The short time the patient was under observation he was given small doses of thymus gland without appreciable effect. No doubt also with the idea of improving calcium metabolism the family physician (in another state) had given the patient up to 36 grains of calcium chloride a day for weeks with no result beyond decided stomachic disturbance. The history of fever and epileptoid attacks at once suggested an encephalitis but the residual paralysis of abdominal muscles and spinal erectors in the lumbar region discover the true nature of the infection, viz.: acute infantile paralysis.

In considering the shocklike motor phenomena of these cases one recalls that poliomyelitis aside from paralysis presents the picture of meningitis or its counterpart due to intense hyperemia of the brain occurring in some severe infections. Again, motor symptoms have not been unremarked in meningitis or cerebral hyperemia as witness the "startings" of tuberculous meningitis referred to by Osler and the generalized tonic contractions of the muscles of the jaw, neck, back and limbs noted by Escherich usually as a sequel of some acute infection or occurring as an independent malady. However, such symptoms have been interpreted (and no doubt correctly), as toxemic irritation of the motor cortex and have not been regarded as of specific diagnostic significance. For this reason Colliver's[6] comments upon the diagnostic import of early motor phenomena in infantile paralysis is of considerable interest. He has remarked these in sixteen cases during the preparalytic stage. His observations are convincing in respect to variety of motor phenomena noted but they fail to give, as I believe, entirely concrete impressions of movements seen.‡ I put to one side the tremor noted in case 1, being doubtful if it should be classed in the category which Colliver depicts and indeed, in the same respect, I am not entirely certain regarding the dramatic and shocklike jerking of head and limbs which was common to both cases. Yet it would seem this may be identified as "twitching which may affect the whole body and in the beginning lasts less than a second." In any event, muscular spasms of this character occurred in both instances during the acute stage of the disease and once as a residual symptom. The phenomenon comprehends a typical *myoclonus*. This symptom has been defined as "involuntary, unsystematized, arrhythmic, quick, muscular contractions similar to that produced by an electric shock. They may be localized or disseminated and may embrace a muscle, a muscle group or only a few fibres" (Church and Peterson). In this connection we recall that myoclonus sometimes occurs with epilepsy comprising the "association disease" myoclonus—epilepsy, and again, that between myoclonic paroxysms, tremor of the same muscles may present sometimes fibrillary in character (so-called live flesh). It is also true that myoclonus is best known as

‡ Colliver says: "The symptom referred to is a peculiar twitching, tremulous or convulsive movement of certain groups of muscles lasting from a few seconds to less than a minute. The amplitude of vibration is greater than a tremor, not so constant and long as a convulsion and more regular than mere twitching, yet it has some elements of all of these. It usually affects a part or whole of one or more limbs, the face or jaw, but it may sometimes affect the whole body. The symptom may readily be overlooked in the beginning as it usually lasts less than a second and unless the patient is disturbed does not recur oftener than every hour or so. Later, the duration of the spells lengthens to a few seconds, recurring also at shorter intervals. This condition is often accompanied by a peculiar cry similar to the hydrocephalic. At times there is a slight convulsive movement "just like a chill," as the mothers say, during which time the child is apparently unconscious with eyes set for a few seconds and then he apparently becomes perfectly normal again. This brief unconsciousness during which the child's eyes are set, may occur without noticeable convulsive movements. It acts thus something like a petit mal. I have observed it as a twitching of the lips with tongue running in and out and a working of the jaw, preceding bulbar cases. . . . The least stimulation of the skin is followed by slight convulsive movements with rigidity of the arm, fingers separated and wrist flexed (athetoid movements?). When the patient turns in bed, through either an external stimulus or an effort to coordinate, the movements are quick and jerky accompanied usually with slight convulsive movements of the limbs. The least noise produces in certain cases short series of convulsive movements similar to those in strychnine poisoning only not so general. This symptom seems to be similar to the infection neuroses described by neurologists of which tetany and chorea are good examples." This description covers a wide latitude of motor phenomena, viz.: a range of muscular contraction from tremor to convulsive movement of the whole body, and spasm both tonic and clonic. Colliver states that practically no reference to this symptom can be found in the literature of poliomyelitis but that both Zappert and Wilbur noted muscular twitching in the limbs. Jerking of the limbs and head better describes the particular movements observed in the cases here recorded.

a clinical entity, acute or chronic, of unknown etiology and that it has the tendency to subside after many months during which remissions and exacerbations may have been experienced. However, what is of particular interest to the subject in hand, is the precedent observation of myoclonus in acute infectious disease, viz.: in Dubini's disease, otherwise known as *electrical chorea*. The meager epidemiology of this affection records a 90% fatality. First described in 1845 in reference to cases which occurred in malarial districts of Italy, it was for a time thought to be of paludal origin. Its etiology, however, has remained obscure. So much as is known of the pathology of electrical chorea comprises "pulmonary and splenic congestion, inflammation of the meninges, increase of cerebro-spinal fluid, cerebral congestion especially at the base and softened foci in the cortex and great ganglia (Church and Peterson).[7] The brief clinical descriptions available refer to rythmical movements, as if from an electric shock, in the extremities and rarely in the head and face. Fever may be present. Pain in the head and neck may be an early symptom. Sensibility is not greatly affected but hypersensitiveness may easily be evoked and this exalts the motor phenomena. Epileptiform attacks may occur. In some cases paralysis may supervene and toward the end of the attack atrophy of muscles may be apparent (Church and Peterson; McCarthy[8]). The foregoing suggests the interesting possibility that infectious electrical chorea is really acute poliomyelitis with myoclonus as a dominant feature. The further study of motor phenomena which may appear early in acute poliomyelitis seems indicated. While doubtless in no way pathognomonic, such manifestations may prove a clinical aid at a time when diagnostic difficulty is the rule.

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WAR DEPARTMENT

HEADQUARTERS WESTERN DEPARTMENT
Office of the Department Surgeon

San Francisco, Cal.
April 19, 1917.

Dr. Sol Hyman,
Editor, California State Journal of Medicine,
Butler Building,
San Francisco, Cal.

Dear Doctor:

In anticipation of the early legislation by Congress to call five hundred thousand men at once and five hundred thousand more within the year into active training and service, and, in view of the necessity for the immediate enrollment of a large number of the younger medical men of the country in the Medical Reserve Corps for service with these troops as regimental surgeons and assistants, ambulance companies, field hospitals, etc., I would appreciate any publicity you may be able to give in your columns relating to this matter. Information and all necessary blanks can be obtained from me either at the Department Surgeon's Office or at the Letterman General Hospital.

Very truly yours,
Signed: GUY L. EDIE,
Colonel, Medical Corps,
Department Surgeon.

SYNTHETIC SUBSTITUTES FOR COCAIN WITHDRAWN FROM FEDERAL REGISTRATION.

On page 129, Department of Pharmacy and Chemistry, attention was called to the decision of the United States Circuit Court of Appeals, holding that synthetic substitutes for cocain and eucain did not come under the jurisdiction of the Harrison Act.

Below we print the letter of instructions of the Treasury Department in conformity with this decision:

B.C.K. TREASURY DEPARTMENT.
Office of Commissioner of Internal Revenue,
Washington.
March 28, 1917.

M-n. Mim. No. 1497. Suspending enforcement T. D. 2194, relating to synthetic substitutes for cocain.

To the Collectors Internal Revenue, Revenue Agents, and Others Concerned:

Referring to T. D. 2194, holding that any synthetic substitute for cocain, alpha or beta eucain, or their salts or derivatives, comes within the provisions of the Act of December 17, 1914, and that persons using or having in their possession any such synthetic substitute are required to register and obtain such substitutes upon official order forms and otherwise conform to this act, this office has decided to suspend the enforcement of the ruling of April 26, 1915, until you are otherwise advised.

This action is taken in view of the decisions of the U. S. District Court, Southern District of New York, of June 28, 1915, and of the Circuit Court of Appeals for the Second Circuit, of February 21, 1916, holding that these synthetic substitutes did not come within the provisions of section 1 of the act.

Therefore, you are directed to notify all registered persons in your district or others who may be affected by T. D. 2194 of the suspension of this ruling.

W. H. OSBORN,
Commissioner.

Approved:
W. G. MCADOO,
Secretary.

Society Reports

CONTRA COSTA COUNTY.

The regular meeting of the Contra Costa County Medical Society was held on Saturday evening, Mareh 24, at the residence of Dr. W. E. Cunningham.

The society was called to order by its president, Dr. P. C. Campbell. Those present at the meeting were Drs. C. L. Abbott, G. M. O'Malley, P. C. Campbell, W. E. Cunningham, H. N. Belgum, C. C. Fitz Gibbon, H. L. Carpenter, C. E. Camp, J. T. Brenemman, W. W. Frazer, Hall Vestal, E. W. O'Brien and U. S. Abbott.

The minutes of the previous meeting were read and approved and the usual business of the sociey was transacted.

Dr. Henry Harris of San Francisco read a most entertaining and instructive paper on "Blood Pressure—its Physiology, Prognosis, Diagnostic Value and Treatment."

After an elaborate Dutch luncheon was served the meeting was adjourned to meet again May 26.

Fraternally yours,
C. L. ABBOTT, Secretary,
Contra Costa Medical Society.

KERN COUNTY MEDICAL SOCIETY.

Report of Meeting of March 16th, 1917.

The Kern County Medical Society was called to order by President F. J. Gundry at 8:30 p. m. at the City Manager's Office, City Hall, with 50 per cent. of the membership present.

After the usual routine business, Dr. Ralph Williams of Los Angeles was introduced to the Society by the President. Dr. Williams held a dermatological clinic for a half hour, then presented a paper, "The Relation of Dermatology to General Medicine." A general discussion followed which continued until 11 o'clock, when an enthusiastic vote of thanks was tendered Dr. Williams, with the wish that he might be with us at some future date.

The meeting adjourned after a resolution was passed to hold the next meeting on May 18, 1917, as the meeting of the State Society conflicts with the April date.

C. A. MORRIS, Secretary.

LOS ANGELES COUNTY.

Eye and Ear Section.

Attendance—Drs. Bullard, Brown, Davies, Dudley, Dilworth, Detling, Griffith, Graham, Kyle, Libby, Lund, T. J. McCoy, Geo. W. McCoy, R. W. Miller, Montgomery, Old, Rogers, Stivers, Swetman, Tholen and True.

Visitors—Drs. Browning, McKellar, Bogue, Endleman, Cummings, Gage, Crane, Strader, Singleton and Henninger.

Minutes of the previous meeting were read and approved.

The following eases were reported:

Dr. True—Small papillomatous growth center boy's tongue, hard, anterior half looked like angioma, posterior half is too fibrous to be angioma, there are no symptoms, no hemorrhage, no pain.

Dr. T. J. McCoy showed a case of Xanthelasma Palpabrarum, very extensive, in which chromic acid is being used with much suecess, on probe passed into the growth. In 39 cases treated by him over a period of 20 years, he has never had a ease where chromic acid did not restore the normal pink color of the skin.

2nd case. Iridectomy.

3rd case. Foreign body in the eye.

Dr. Stivers reported a case of Innominate Aneurism with laryngeal involvement.

Dr. Roland Cummings read a paper on "General Considerations of Focal Infections."

Dr. Julio Endleman read his paper on "Focal Infection from the Dentist's Standpoint."

Dr. Montgomery read his paper on "Sinus and Mastoid in Focal Infection."

Dr. Stivers read his paper on "Tonsil and Adenoid in Focal Infection."

Discussion.

Dr. Tholen—Mouth. In the mouth and teeth are frequently found foci of infection. The X-rays are very useful in diagnosis.

Dr. Browning—Mouth infection in tubercular patients, a point well brought out in Dr. Stivers' paper, relieve one condition and others subside. Dentist work is sometimes incomplete, foci should all be cleaned up.

Dr. Brown—Tonsils are affected most commonly because of their position and their poor drainage. In deciding whether patients' tonsils should be removed or not I consider the previous history. Had one patient with many attacks of iritis due to tonsil infection. Iritis cleared up after tonsil removal. In chorea we do not get good results because the cervical glands will, if infected, keep up the systemic infection. Tuberculosis fairly common in adenoid cases, 17 in 1000 eases. My experience satisfies me to go on with further work in this line.

Dr. Sweet—We should have some understanding of the work with the dentist in the eases we refer to him. Should have X-ray taken.

Dr. Montgomery—Dr. Stivers' paper recalls an attack of acute appendicitis following tonsillitis, also case quinzy, incised four times by general physician. Trachcotomy done by me to give air but patient died of acute streptococcie infection.

Dr. Endlemen—I wish to ask Dr. Montgomery whether I understood him to say "Teeth cause abscesses in the body but the teeth are not abscessed by general bodily conditions." My answer to that would be no. Abseess of the teeth can occur from general bodily condition, but usually this is a single abscess.

Dr. Rogers asked Dr. Cummings what is the chief source of cough in focal infection, what nerves, etc.

Asked Dr. Brown if in iritis acute to promptly remove the tonsil would not be too radical? It would lower patient's vitality and set up further infection.

Dr. Detling—Dr. Stivers went into physiology of tonsil thoroughly and I was glad to hear it. In my work at Children's Hospital I find that children are referred by physicians and nurses for trivial conditions. I refuse to operate on children under 6 or 7 years, unless some particularly abnormal conditions.

A vote of thanks was given to Drs. Endleman and Cummings for their courtesy in coming before this section with interesting papers.

Dr. Cummings (in closing)—We see very little trouble in freely drained extra-osseous foci, they are well drained. The intra-osseous on the other hand is not well drained. The tonsil is badly drained so much sear tissue, etc., makes them the most common source of focal infection.

Dr. Endleman—Disagree with Dr. Cummings as to the extra-osseous foeus, it is not freely drained. Clinical results are very convincing.

MENDOCINO COUNTY.

At the call of the president, Dr. Frank C. Peirsol, a meeting was held at Albion, in the office of Dr. H. H. Wolfe, on February 10, at 8 p. m. Dr. R. H. Hunt of Bartlett Springs, Lake County, was elected to membership. A committee, consisting of Drs. Hunt, Rea and Stout, was appointed to get in contact with the Lake County physicians

and to invite them to become members of this society. A resolution passed instructing the Secretary to write our legislators to work and vote according to the recommendations of the Medical Society of the State of California.

Dr. Campbell read a paper on scarlet fever.

Dr. C. Francis Baker contributed a paper entitled, "A Brief Study on Preventive Medicine."

Those in attendance were Drs. F. C. Peirsol, L. C. Gregory, H. O. Cleland, F. McL. Campbell, H. Peddicord and O. H. Beckman.

Sincere thanks to our host, Dr. H. H. Wolfe, who banqueted us in regal style. I hope the stream of life will always give him a favorable tide.

OSWALD BECKMAN, Secretary.

SAN DIEGO COUNTY.

Dr. George H. Kress, president of the State Society, and Dr. Clarence E. Moore, Councillor for the Second District, visited San Diego on the evening of February 24th and enjoyed the hospitality of the San Diego County Society. Dr. Moore presented an able paper on calculus of the ureter and kidney, illustrated by stereopticon with radiograms. President Kress addressed the meeting on the detail planning necessary for successfully handling the State convention. He expressed himself as well pleased with the arrangements being made by the local committee and predicted a splendid gathering in April.

The San Diego County Supervisors have advertised for tentative plans for a County Tuberculosis Hospital to be built in such a manner that the same may be added to from time to time.

The Medical Library, through the courtesy of the management of the Timken Building in which it is located, has been given an extension quarters which was very much needed.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the residence of Dr. J. D. Young on Friday evening, February 23. In the absence of the president, First Vice-President R. T. McGurk was in the chair. Those present were Drs. R. T. McGurk, H. C. Petersen, F. Conzelmann, J. T. Davison, B. F. Walker, H. J. Bolinger, E. B. Todd, Mary Taylor, N. E. Williamson, L. Dozier, S. P. Tuggle, H. E. Sanderson, R. R. Hammond, J. D. Young, Hudson Smythe, Margaret Smyth, E. A. Arthur and D. R. Powell, with Dr. Allan Powers of Tracy and Dr. Frank L. Kelly of Berkeley as guests.

Following the business session, the chairman introdueed Dr. Frank Kelly of the State Board of Health, who read a paper on the "Epidemiological Control of Diphtheria," in which he spoke of the necessity of detecting the carriers and controlling them until such time as they were cleared up. He also spoke of the Schick reaction as a ready means of dividing those exposed into immunes and non-immunes and the eonsequent saving in the amounts of anti-toxin neeessary as prophylactic doses, in that the immunes would not need such protective measures. Dr. Williamson of the State Hospital spoke of his experience in the control of diphtheria in that institution, with particular reference to the assistance of the Schick reaetion. Drs. Petersen, Arthur, Taylor and Davison also joined in the discussion. Dr. D. R. Powell spoke of several cases of laryngeal diphtheria in two of which emergency tracheotomies had been necessary.

There being no further discussion, the meeting adjourned to enjoy a delightful repast.

The regular monthly meeting of the San Joaquin County Medical Society was held at the residence of Dr. J. D. Dameron, Friday evening, March 30, President Charles R. Harry presiding. Those present were Drs. C. R. Harry, B. F. Walker, E. A. Arthur, J. D. Dameron, Mary Taylor, R. B. Knight, C. D. Holliger, J. T. Davison, L. Dozier, C. F. English, G. G. Hawkins, Minerva Goodman, Margaret Smyth, A. E. Edgerton, J. V. Craviotto, and Dr. R. Powell with Dr. McCloskey as guest.

A committee of five was appointed, to be known as the Auxiliary Medical Defense Committee of San Joaquin County and to co-operate with the Medical Committee Council of National Defense. The president also appointed a committee of five with the City Health Officer as ex-officio member to confer with parties interested in the establishment of a certified dairy to supply the city of Stockton.

At the conclusion of the routine business, the scientific program consisting of a symposium on "Meningitis" was taken up. The first paper by Dr. J. D. Dameron was on Etiology, Pathology and Symptomology; the second paper by Dr. Craviotto on the Prognosis and Treatment, in which he manifested particularly the advantages to be gained by heroic doses of antimeningitic serum; the third paper by Dr. A. E. Edgerton on Meningitis of Otitie Origin. The papers were discussed respectively by Drs. Arthur, Harry and Powell, following which there was general discussion by most of the members present.

At the conclusion of the discussion, the meeting adjourned to enjoy a social repast.

DEWEY R. POWELL, Secretary.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the month of March, 1917, the following meetings were held:

Tuesday, March 6—Section on Medicine.

1. Aortic Disease; Demonstration of Case. G. E. Ebright.
2. Some Interesting Chest Cases. H. P. Hill.
   (a) Abseess of the Lung, with Development of Acute Penetrating Gastric Ulcer.
   (b) General Empyema, with Development of Pleurocutaneous Fistula and Bronchial Fistula.
   (c) Obstruction of Left Bronchus with Aneurysm Perforating Bronchus (two cases).
3. (a) Sarcoma Following Traumatism.
   (b) Acute Suppurative Cellulitis of Stomach. Emmet Rixford.
4. Case of Erythromelalgia. S. R. Dannenbaum.
5. Fracture of the Neck of the Femur. H. A. L. Ryfkogel.

Tuesday, March 13—General Meeting.

Report of a Case of Little's Disease. Rhizotomy (Foerster's Operation). Correction of Deformity by Orthopedic Measures. Re-education. Condition Before and After Treatment Shown by Motion Pictures. Walter F. Schaller and H. L. Langnecker.

Tuesday, March 20—Section on Surgery.

1. Gastroenterostomy. C. W. Lippman.
2. Carcinoma of Rectum. (Illustrated by lantern slides.) Harold Brunn.
3. Tendon Suture; Demonstration of Cases. Sterling Bunnell.

Tuesday, March 27—Section on Eye, Ear, Nose and Throat.

1. Presentation of Cases:
   H. B. Graham. (a) X-ray of Fracture of Skull Through Cribriform Plate, Including Frac-

tures of Anterior Walls of Both Frontal Sinuses.
(b) Stereoscopic Picture Showing Normal Skull Which Simulated Lues.

Hans Barkan. Amyloid Degeneration (?) After Injury.

K. Pischel. Case of Sympathetic Ophthalmia.

H. McNaught. (a) Healed Tuberculosis of One Ear; Active Tuberculosis of the Lung and Larynx.
(b) Carcinoma of Tonsil.
(c) Carcinoma of Larynx.
(d) Anomaly of Fork Test; Bone Conduction Referred to Left Ear; Vestibular Function Active in Left Ear; Infinite Negative Rinne Left Complete Deafness.
(e) Specimen of Brain Abscess Following Chronic Otitis Media.

J. F. Smith. Glaucoma Following Cataract.

2. Preliminary Report of the Bacteria Found in Tonsils. B. Jablons.

3. .....J. G. Sharp.

4. Microbiology of the Buccal Cavity in Relation to Distant Foci. K. F. Meyer.

RENE BINE, Secretary.

SISKIYOU COUNTY.

The Siskiyou County Medical Society held its regular quarterly meeting in Montague, Monday afternoon, 3:30 p. m., April 2. Dr. Will Tebbe, president pro tem., occupied the chair. Those present were: Drs. Hal Warren, Chas. Pius, Geo. Hall, W. F. Shaw, G. W. Hathaway, G. W. Dwinell, Will Tebbe and J. Roy Jones.

A report was given by the committee, Drs. Pius, Shaw and Jones, on health insurance. No recommendation as to the action to be taken by this society was given.

Dr. C. W. Nutting was elected as a delegate to the meeting at Coronado. Dr. G. W. Hathaway read a paper on "The Cystoscope and the Vesical Stone," which was discussed at length.

The next meeting was voted to be held at Shasta Springs on July 2d.

J. ROY JONES, Secretary.

TULARE COUNTY.

At the monthly meeting of the Tulare County Medical Society, held in Visalia on the evening of March 20, Drs. H. J. Willey of Porterville and G. A. Clapp of Lindsay were duly elected to membership.

There was a splendid attendance at this meeting and Dr. Walter V. Brem of Los Angeles, the guest of the society, gave a very interesting and instructive talk on the "Treatment of Syphilis."

In view of the fact that the meeting of the State Society is to be held in April it was voted to omit the April meeting of the County Society.

ADDISON W. PRESTON, Secretary.

LANE MEDICAL LECTURES FOR 1917.

The Lane medical lectures for the year 1917 will be delivered by Dr. Simon Flexner, director of Laboratories of the Rockefeller Institute for Medical Research, during the week beginning Monday, October 8. There will be five lectures in all and they will be given on consecutive evenings, at 8 o'clock. The subject of the series will be: "Physical Basis and Present Status of Specific Serum and Drug Therapy."

Book Reviews

Practical Uranalysis. By B. G. R. Williams. Illustrated. St. Louis: Mosby. 1916.

An excellent little manual for the routine examination of urine for the student and general practitioner The tests are all practical and the simplest and most reliable are selected for use. The interpretations are conservative and to be depended upon. This little book can safely be recommended for general use after the student has been trained in the various methods to be learned in the clinical laboratory. On the whole, the book is a dependable epitome of the best modern methods both as to reliability and interpretation

G. H. T.

Public Health Nursing. By Mary Sewall Gardner, R. N., with an introduction by M. Adelaide Nutting. New York: Macmillan. 1916. Price, $1.75.

While the medical profession has been developing the social aspect of its work, and we have hygiene and preventive medicine added to our activities, the nursing profession has not been idle, as can easily be ascertained from the important work on public health nursing from the pen of one of the pioneers in this field. Miss Gardner has given us a very fine exposition of the mechanism of organized nursing. The history of public health nursing, from earliest times down to date; organization, administration and personnel of visiting nursing; and the special branches of public health nursing; are the main divisions of the book. Most thoroughly gone into are the questions of the type and training of the women who are to be nurses, devoting themselves to this branch of nursing. There is an intimate knowledge of the social service side of nursing that would be of interest to all who are connected with clinics, especially clinics with nurse service and visiting in the homes of the patients. The sub-headings under the specialties include tuberculosis nursing, child welfare nursing, school nursing, mental hygiene nursing, industrial nursing and medical social service. On all of these subjects the comment is keen and the discussion of the principles of the work clear and thoughtful. For all those to whom the subject of public health is of interest this book is to be recommended as a most illuminating and stimulating commentary. G. H. T.

Focal Infection. Lane medical lectures by Frank Billings. Delivered September 20-24, 1915. Stanford University Medical School, San Francisco. Published New York and London: D. Appleton & Co., 1916.

While this topic, new as it is, has already undergone many changes, it is a matter of some satisfaction to read what constitutes one of the very first authoritative and comprehensive statements on this subject. On reading the lectures slowly, one is impressed by the enormous amount of work done in the chemical, bacteriological, pathological and biological laboratories and at the bedside, by the brilliant group of men, whose joint labors produced this new, yet already well-established hypothesis of the etiologic relation of focal infection to systemic diseases. The conferring of specific pathogenicity to the various strains of certain common micro-organisms and of specific elective tissue affinity for specifically cultured micro-organisms and, finally, the conception of the transmutability of the cocci of the streptococcus-pneumococcus group form a triad of epochal thoughts that must be accorded the serious attention of all interested in medicine and the sister sciences. The five lectures that constitute the series contain a world of material and, read at leisure, supply one with a very complete resumé of all that has been done in this line up to the time of the lectures. G. H. T.

The Clinics of John B. Murphy, M. D., at Mercy Hospital, Chicago. (Volume IV, Number VI. December, 1916. Octavo of 238 pages with 72 illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Published Bi-Monthly. Price per year: Paper, $8.00. Cloth, $12.00.

Contents—Portrait Dr. John B. Murphy; Editor's preface; In memoriam Dr. Murphy; Medical history and last illness of John B. Murphy; Osteosarcoma; Ancient injury of skull with focal signs; Harelip; Chiloplasty; Angioma of lip; Series of unclassified illustrations showing certain phases of Dr. Murphy's work; Toxic goitre with melancholia; Exophthalmic goitre; Muscular sinus of arm; Posterior luxation of elbow; Operative reduction; Ununited fracture radius; Fracture phalanx of finger with vicious union; Carcinoma of breast; Sinus of abdomen from gangrene of lung ;Submural abdominal abscess; Fibroid of uterus; Adoption of an attached pedicled flap for cure of an impassable stricture urethra; Hydrocele, Andrews' bottle operation; Ununited fracture of femur; Osteomyelitis of femur; Chronic eburnative osteitis of femur; Gun-shot wound of knee-joint with fracture external condyle and semilunar cartilage; Sarcoma of leg; Tuberculous tenosynovitis of peroneal tendons; Saline proctoclysis apparatus; Writings of Dr. John B. Murphy.

My Birth. The autobiography of an unborn infant. By Armenouhie T. Lamson. New York: The Macmillan Company, 1916. Price $1.25.

The author seeks to dignify human reproduction and to replace superstition and shortsightedness by the fact of the science of embryology. The narrative is much clothed in fancy and sentiment and rather forced to make a point of fact. The effort to convey to the reader an attitude of mind toward the subject and to reconcile the conventional viewpoint with discomforting procedures of nature, is rather too manifest, the tone being quite that of the purity literature which has flooded the press during the last decade and which, from a literary standpoint, is usually uninspired. This is unfortunate because the writer has a fair grasp of embryologic facts. The function of specialized cells, which is the essence of embryology, segmentation and nutrition of the ovum, are processes clearly described. Space is given to discussion of hereditary tendencies, deformity and determination of sex out of proportion to the validity of the scientific facts. Only confusion can be the result of discussion of the points which are still in question. In several places the knowledge of the writer falls short in explanation of cause and effect—for instance, in the metabolism of pregnancy and tubal pregnancy. There is also a tendency to underrate present day pediatrics. On the whole, the book promises to arouse popular interest in the subject. L. T.

Diagnosis and Treatment of Abnormalities of Myocardial Function with special reference to the use of graphic methods. By T. Stuart Hart, A. M., M. D. Illustrated with 248 engravings, 240 of which are original. New York: Rebman Company. 1917.

This little book of 320 pages should be of particular interest to the student or practitioner who desires a little more than ordinary information upon dysfunctions of the myocardium. The clinical value of the volume is much enhanced by the fact that function rather than structure is chiefly considered.

The earlier chapters are devoted briefly to the normal anatomy and physiology of the heart. Polygraphic and electro-cardiographic tracings of the normal are reproduced and interpreted, which fact aids materially in interpreting the numerous tracings of pathological conditions considered in the later chapters. It is delightfully free throughout from technical terms and discussions, and its reading requires but little preliminary knowledge of graphic methods, for it frequently refers to the normal and compares it with the pathological.

Each type of cardiac irregularity is taken up in a separate chapter with discussion as to its etiology, clinical signs and attending prognosis. These are all illustrated by many fine tracings made both by the polygraph and electrocardiograph. The chapter on auricular fibrillation with the frequently accompanying ventricular insufficiency and pulse irregularity should alone recommend the book to every clinician. A lucid description (with charts) of the method of estimating "the average systolic blood pressure" is given in this chapter and its prognostic value becomes so evident that its estimation in every case of this kind would well compensate for the small amount of time required in making the readings.

There are 63 pages in the latter part of the book devoted to treatment which is taken up under the heads of rest, exercise, diet and drugs. The numerous footnote references are further augmented by a large terminal bibliography. J. M. R.

The Nervo-Muscular Mechanism of the Eyes and Routine in Eye Work. By G. C. Savage, M. D. Published by the author, Nashville, Tenn. 1916. Price, $1.00.

The preface of Dr. Savage's book contains a statement which alone is enough to discourage the reviewer from proceeding any further, namely, that "In all the domain of ophthalmology there is no other subject of equal importance with that of ophthalmic myology"; and this in view of the fact that aphthalmology embraces such interesting problems as the cause of glaucoma, the cause of choked disc and the relation of the eye to many general diseases.

However, we proceed with the review and find the book composed of a series of axioms which summed up mean only that both eyes must look directly at an object at the same time in order to see it sharply and as a single, not as a double object; a truism familiar to every medical reader.

To speak of a "fatal mistake of Helmholtz," unless it can be proven, is daring at the least; and if it is that Helmholtz chooses to take an arbitrary anterior pole of the eye from which to calculate the posterior, whereas Dr. Savage takes an arbitrary posterior, it will be left to some future student of the subject to decide whose fatal mistake it is.

Dr. Savage gives a number of centers of control of the ocular muscles which he plots and a series of diagrams he believes firmly establish the anatomical verity of these centers. While theoretically we cannot say that these centers may not exist as indicated, we do object to the dogmatic presentation of these centers as proven facts. They are not proven, and Dr. Will Walter in the Section on Ophthalmology of the American Medical Association in 1916, said very aptly in talking of the localization of control of ocular movements, "We are talking of physiologic levels, not spirit levels." In speaking of the eighteen conjugate centers standing ready at birth for action, Dr. Savage says, "One-half of these axones are to be forever inactive, as if dead wires, for the nine centers from which they go will never become generators and dischargers of neuricity"; one thinks one is reading an adverse criticism of some automobile engine.

The practical tests of muscular imbalances described, are familiar to all ophthalmologists and there is no criticism to be made of these, except perhaps, to say that the majority of practitioners

do not ascribe the great practical importance to them that Dr. Savage does; that is purely a matter of individual experience and judgment.

The small chapter on routine in eye work is interesting because it gives one the routine procedures of a practitioner of as long experience and of as high a standing as Dr. Savage. For those doing eye work as a specialty there is nothing to be learned from it, however, as we all have to adopt our own routine as our character, temperament and training leads us to it.

H. B.

Handicraft for the Handicapped. By Herbert J. Hall and Mertice M. C. Buck. New York: Moffatt, Yard & Co. 1916.

A book written from practical experience is always of value and especially on this important subject of employment for those of our patients who are suffering from nothing to do. This book very fully describes the essential points for the casual reader on the subject, and also many of the more detailed directions for the teacher or the patient. The variety of subjects covered enables us to choose the one most adapted to our individual needs.

Parts of the work as here described could be applied to cripples, convalescents from acute or chronic diseases not able as yet to go back to hard work, tuberculous patients in an arrested stage, neurasthenics and some with more serious mental deficiency.

The authors take up the subjects of basketry, chair-seating, netting, weaving, bookbinding, cement-working, pottery, and light blacksmithing, and have appended a very considerable reference list of books going into more detail on many of these subjects. In the chapter on basketry details are given as to the kind and size of reeds to use, how to prepare them for use and diagram illustrations of just how to weave them to produce certain baskets and forms. Pictures are shown that make chair-seating appear very easy. Different knots employed in netting and numerous suggestions as to articles that can be made are of help in that section. Weaving requires a larger apparatus than some of these other arts, but this too is carefully described. Bookbinding, although quite a complex process, is carefully outlined and pictured. In this, as in the other arts and crafts, a little practical instruction will aid materially the suggestions in this book. There is considerable difference between cement work and pottery, the former requiring no kiln or expensive lathes and consequently producing a cruder, but a nevertheless, serviceable set of articles. Blacksmithing does not refer to shoeing horses, but to making useful household wares, such as andirons, pokers, heavy latches, etc.

And so readers of this book will find that Dr. Hall and Mertice Buck have from their own experience at Devereaux Mansion, Marblehead, and elsewhere, suggested many practical occupations that are a pleasure as well as a stepping stone to self-reliance and health.

P. H. P.

DEPARTMENT OF BACTERIOLOGY AND PATHOLOGY.

(Edited by Benjamin Jablons, M. D., San Francisco.)

[This department has as its chief object the dissemination of the special knowledge that is being developed in the scientific laboratories of the world, and which are of practical interest to the medical practitioner. Abstracts of general articles will be published from time to time as well as preliminary reports of subjects that are of universal interest.]

Complement Fixation for Tuberculosis.

To appreciate the factors entering into the Complement Fixation Reaction for Tuberculosis it is necessary to keep two points in mind; first, the reaction of the human organism to the tubercle bacillus and its derivatives and, second, its reaction to the tissue products resulting from the action of the tubercle bacillus. It is known that the introduction of the foreign protein of whatever nature into the body calls a specific and non-specific response. The specific reaction is that evidenced by the mobilization of an antibody, whose nature may be that of either an agglutinin, a precipitin, a bacterictroptin, an opsonin, a bacteriolysin or a complement fixing antibody. Then the non-specific antibodies may also be mobilized and these are chiefly of the ferment and anti-ferment variety. In order therefore to diagnose the presence of an organism that is sufficiently active to call forth a response from the infected body, it is necessary to seek for one or even all of these antibodies.

Datta, in an article published July, 1915, in the Policlinico, summarizes his studies in sixty tuberculous patients in whom parallel observations were made of a skin tuberculin reaction, agglutination precipitin and complement fixation test, using two different technics for the latter. He found that the skin tuberculin reaction was the most constant in all cases of pulmonary tuberculosis, excepting those that were more advanced. The fixation of complement came next in order of frequency and was most constant in the graver cases. The agglutinins and precipitin tests never gave independent positive findings but trailed the others, giving positive findings occasionally in the milder cases. He advises for diagnosis and prognosis of tuberculosis, that the skin tuberculin test plus the complement fixing reaction be employed. Krause's recent publications on the studies of the skin reaction in the immunized guinea pigs conclusively prove the contention of many observers that the supersensitiveness to tuberculo protein after pre-existing infection is never entirely lost even after healing excepting in the presence of intercurrent diseases. This naturally increases the limitations of this test as a diagnostic factor for the determination of an early active tuberculosis.

Theobald Smith, in a recent number of the Journal A. M. A., states that agglutinins and precipitins are constant in spontaneous infections with the tubercle bacillus; the opsonins are, however, slightly reduced or fluctuating. Complement fixing bodies are never present in healthy individuals, but occur in 68% of those infected. This has been disproved by most of the recent work. Opsonin determinations have been discarded since the early reports of Wright owing to their inconstancy and the fluctuations produced by auto-infection.

Complement deviation still remains the most delicate test for the detection of the presence of an antibody producing substance. Its delicacy is such that even minimal amounts of proteins can be recognized when brought in contact with their specific antibodies in the presence of complement. This accounts for the strenuous efforts immunologists have made to apply this test to the diagnosis of tuberculosis since Bordet and Gengou first described their phenomenon.

A great deal of interest has been aroused recently in the subject owing to the fact that several investigators claim to have attained the goal which they had been striving for since the earliest reports of the work of Wassermann and Bruck. The chief difficulty was to obtain a suitable antigen which would react with the antibodies produced as a result of an infection with the tubercle bacillus. This if obtained would solve the problem of early diagnosis of tuberculous infection and also determine whether a definite cure was present. The difficulties encountered can best be seen from a review of some of the work of various investigators. In the early days of the test the various

preparations of tuberculin were used, although in 1901 Widal and Lesmond, who first carried out complement fixation tests on tuberculosis, used homogeneous emulsions of tubercle bacilli of the A. C. type. Old tuberculin which, as you know, is practically a fifty per cent. glycerin extract of the soluble products of the metabolism of tubercle bacillus, was used by Wassermann and Bruck in the demonstration of the antibody after tubercular infection, but gave no satisfactory results in diagnosis.

Bacillus emulsion consisting practically of the insoluble components of the tubercle bacillus was used, but the results obtained were of no great value because the early cases failed to react. This manifestly rendered this substance a poor antigen for this method of investigation.

The detection of the antibody developed by the human organism against infection with tuberculosis is surrounded with many difficulties. Present knowledge justifies the assumption that there are several antibodies developed against tubercular infection. Bergel, who studied the effect of the lytic substances within the peritoneal cavity of the white mouse upon the tubercle bacillus, claims that the bacillus is made up of several layers, the first being a wax-like mantel which is strongly acid and alcohol resistant. Beneath this mantel there is another layer which consists for the greater part of a mixture of lipoids and fatty acids which contain wax granules. Within these layers there is another layer consisting entirely of neutral fat which is arranged in rows of granules bound together by thin fibers. Beneath this the albuminous nucleus of the tubercle bacillus rests, and according to Bergel, each of these layers has a different staining reaction and a different chemical composition, thus we can see that the body must react by the production of the tubercle bacillus. In addition it may be supposed that the necrotic caseated focus represents a foreign body from the standpoint of tissue cells and probably calls forth the production of antibodies. These features explain the varied attempts upon the part of many investigators to produce a suitable antigen to determine the presence of complement fixing bodies in the circulating blood.

Much's work was based practically on this principle, and Much on this basis prepared four partial antigens, the first being lactic acid extract, second an alcoholic, third an ether extract, and finally fourth, the protein residue. The lactic acid extract was discarded, but the three remaining antigens were used. These antigens failed to give constant results, some tuberculosis sera reacting with one, while others would react with another of these antigens. The only fact of interest is that Much, in immunizing animals and individuals, drew the conclusion that there was no humoral immunity present in tuberculosis, but that it was chiefly of a cellular nature. In other words, antibodies were not thrown out into the blood stream excepting when an excessive reaction to the bacillus had taken place. His results prove that the partial antigens are similarly of very little value in the early diagnosis of the disease, although it opens up an interesting line of investigation into the human body's immense response to tuberculosis.

Besredka in 1913 published his results in tuberculosis fixation, using as an antigen a filtrate derived from a medium consisting of a mixture of bouillon, egg-white and egg-yolk, in which tubercle bacilli were grown. His results were most encouraging excepting for the fact that the samples of tuberculin obtained in this way varied in their antigenic qualities. Another source of error was that this antigen gave cross-fixation with leutic sera. This was at first thought to be due to the lipoids contained in the media, but Brofenbrenner, who is foremost among those who have investigated this antigen in the United States, found that positive reactions occurred with certain syphilitic sera even after the lipoids had been extracted from it. Brofenbrenner has also recently proven that a syphilitic serum after being brought in contact with antilipotropic substances which will absorb these will subsequently give a fixation with the Besredka tuberculin which argues for the specific nature of the test. Inmann, Kuss, Leredde and Rubenstein found this antigen to be non-specific.

Calmette and Massoll in 1912 devised a water and peptone soluble antigen which gave very reliable results. The water soluble extracts give fixation in the late stages of the disease, whereas, the peptone soluble extracts gave fixation in the early stages of the disease.

Stimson of the Public Health Laboratories is perhaps the only one of the American investigators previous to 1915 whose investigations of the subject have gained any attention. Stimson had undertaken a fairly extensive and thorough trial of the Besredka and Calmette peptone-water soluble extracts and his conclusions are as follows:

Depending upon the antigen and the technic employed, the proportion of tuberculosis cases where positive fixation will be demonstrated will vary from a maximum of some 95 per cent. down to a much lower figure. While these antigens and technics giving the higher percentage of positive results are more valuable in confirming suspected and detecting unsuspected cases, they tend to approach such tests as that of the von Pirquet in failing to afford much information as to the stage, extent and activity of the tubercular process, nevertheless the continued presence of reactive bodies in the serum of a given patient on repeated examination, when no antigens have been artificially administered is, he believes, strong presumptive evidence of continued or recent activity of the lesions. It is striking that the antigens employed seem to have given excellent results in the hands of the original investigator, but in many instances these results could not be confirmed when used by other workers.

Among other antigens are to be mentioned the alcoholic antigen of Dudgeon, Meek and Weir, and Hirschfelder's pepsin antigen as well as the tissue antigens prepared from normal and tubercular tissues. According to many workers the least criticized antigen is an emulsion of living virulent tubercle bacilli which obviates the occurrence of non-specific reaction. These constitute the basis for the antigens used by Caulfield, Land, Fraser, McIntosh, Filde, Radcliffe and others.

Irons and Nucoll used autolyates in the sero diagnostic test of gonorrhea. This has led Corper of the Municipal Sanatorium of the City of Chicago to seek products derived from autolysis of tubercle bacilli as antigen for this test. He found that liberation of nitrogenous substances after eight to ten days' incubation reached its maximum on the tenth day, and that the anticomplementary titre as well as the fixing titre increased from day to day up to the tenth day. At that time one one-hundredth of the original titre of the emulsion was found sufficient to bind the complement into the presence of tuberculous sera. He carried out a series of tests in 361 persons and found that the complement fixation test with autolysate antigen for tuberculosis is not absolute, being positive in about 30 per cent. of all the clinically definite cases of both active and inactive tuberculosis, and concludes that the value of the complement fixation test for tuberculosis lies in the fact that, taken in conjunction with other findings, a definitely positive reaction makes the diagnosis of tuberculosis certain. It is of value also from a differential diagnostic standpoint in that it indicates tuberculosis, when positive, as against syphilis, carcinoma, ab-

scess of the lung, empyema from other causes, bronchiectasis, etc.

The practical absence of a reaction in non-tuberculous cases makes this test, when positive, of far greater value in the diagnosis of tuberculosis than any of the biologic tests for tuberculosis thus far discovered. A positive test was never obtained in the absence of a positive von Pirquet reaction, but a large percentage of clinically normal individuals giving positive von Pirquet reactions were negative in fixation tests.

Craig modified the Besredka antigen by growing his bacilli in an alkaline egg broth and then extracting it with alcohol. The difference consisted largely in that the antigen was an alcoholic extract of the bacilli plus the medium in which they were grown minus the insoluble residue and precipitate left after extraction. In his last communication on this subject, he had modified his medium, growing tubercle bacilli on the surface of Bedders starch medium and subjecting it then to the same procedure as in his original communication. Since his results are very striking, it may be of interest to state them here. He tested 209 cases of tuberculosis of which 183, or 37.5 per cent., gave a positive reaction, and 26, or 12.4 per cent., gave a negative reaction. In 159 cases there was absolute inhibition while in 24 there was almost complete inhibition. He found 65 per cent. of fixations in cases considered inactive and argues that the test indicates the fallaciousness of clinical signs in determining whether a patient is to be considered an arrested or a cured case of tuberculosis. He states that many of these patients formerly considered cured but who since gave positive fixations, have developed symptoms. He obtained the highest percentages of cases in active infections in the moderately advanced class of patients, totaling 98.3 per cent. of those examined. Inactive cases gave 67.7 per cent. fixation and over 80 per cent. of these individuals he claims have relapsed clinically. In the far advanced cases his results are 96.4 per cent. positive fixations as compared with 96.7 per cent. in the moderately advanced, and 98.3 per cent. in the incipient cases. He claims that the method is of distinct clinical value, and does not give fixation with clinically non-tubercular or syphilitic sera. The most encouraging results, however, are those reported by Miller, who in conjunction with Zinsser, has employed an antigen prepared by triturating living or dead bacilli with dry crystals or ordinary table salt and then adding distilled water up to isotonicity. Although many antigens have given favorable results, Miller considers that the antigen they have reported is superior to the others in use, because it has failed in their hands to give cross-fixation with luetic sera, has usually been negative in arrested cases, and has been almost invariably positive in active cases. It seems also to be one more easily prepared.

It is seen, therefore, that efforts at the recognition of complement fixing bodies have been directed first against those produced by the whole bacillus, then by tuberculins, then by split products of the tubercle bacillus, and finally by what is called tissue antigens. A fairly complete summary published by Miller showed that the latter group when prepared minus tuberculins gave uncertain results. Where tuberculin was used there was also a margin of error which rendered the test of doubtful value. The antigens made up of bacillary suspensions also gave good results but a few observers have reported positive fixations with clinically arrested cases. The antigens made up of split products gave non-specific fixations with normal non-tuberculous individuals.

It is not necessary to recapitulate all of the results obtained. It suffices that up to the present time the best results have been reported with the antigens of Calmette and Massol, which contain endobacillary substances extracted by water and peptone water, the tuberculin of Besredka, which is the filtrate of an excellent culture medium for tubercle bacilli, but which is not always specific, and the salt extracts of Miller and Zinnsser, as well as the alcoholic extracts of Craig. In addition Petroff has prepared antigenic substances of bacilli grown on his gentian violet medium which he has separated into a lipoid and protein fraction which he claims gives satisfactory results. This is quoted in an article by Webb in the February number of the Journal of Laboratory and Clinical Medicine, who concludes also that the antigens of Calmette and Massol and those of Miller and Zinsser have proven reliable in cases carefully controlled by clinical diagnosis and by X-ray plates. In the last article published by Miller in the J. A. M. A. he gives the results of observations made upon 1000 cases. They were as follows: 284 cases of pulmonary tuberculosis gave positive reactions in 275, and negative in 9. Second, non-tuberculous and normal patients react negatively 144 cases; 243 Wassermanns all negative except 7, and in these 7 tuberculosis was established in 5 and not excluded in the other 2. The test was negative in arrested and in negative cases. Of 113 tested, 103 were negative and 10 positive. As a result of his studies he believes that there are cases of tubercle bacillus carriers and that the expectoration of tubercle bacilli is no indication of the activity of the disease.

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280 E.

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Krause.

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Theobald Smith.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

(Devoted to the advancement of Pharmacy and its allied branches; to the work of the Council on Pharmacy and Chemistry of the American Medical Association, and to matters of interest bearing upon therapeutic agents offered to the medical profession. The editor will gladly supply available information on subjects coming within the scope of this Department.)

NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Nonofficial Remedies, 1917, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Tablets Sodium Chloride and Citrate-Squibb (Dr. Martin H. Fischer).—Each tablet contains sodium chloride 1 gm. and sodium citrate 2 gm. E. R. Squibb and Sons, New York.

Optochin.—Ethyl-hydrocupreine.—A synthetic alkaloid closely related to quinine. It has the antimalarial and anesthetic action of quinine, but toxic symptoms, such as tinnitus, deafness, amblyopia or amaurosis (retinitis) are more liable to occur than with quinine. Investigations indicate that the drug may be of value in the treatment of lobar pneumonia, when its safe dosage has been determined.

Reports indicate that the drug is of decided value in the treatment of pneumococcic infection of the eye (ulcus corneae serpens). Optochin is insoluble in water, but may be used in 1 to 2 per cent. solution in a bland fatty oil or as an ointment. Merck and Co., New York.

Optochin Hydrochloride.—Ethyl-hydrocupreine hydrochloride. The hydrochloride of optochin (see above). It has the therapeutic properties of optochin, but is soluble in water. For application to the eye and instillation into the conjunctival sae a freshly prepared 1 to 2 per cent. solution in water is used. Merck and Co., New York. (Jour. A. M. A., Mareh 3, 1917, p. 713.)

ITEMS OF INTEREST.

Effect of Opium Alkaloids on the Ureters.—According to D. I. Macht morphin and the opium alkaloids having a similar constitution increase the contraction and produce a greater tonicity of the ureter, whereas papaverin and the opium alkaloids constituted similarly produce a slowing or total inhibition of the contraction and relaxation of the tonus. In opium and pantopon, which contains the total alkaloids of opium, the effect of the morphin group preponderates. Ureteral colic is due to spasmodic contractions of the ureter caused by the irritating calculus and hence the use of papaverin or opium is more rational than that of morphin. Furthermore, the slighter toxicity of papaverin, its tonus lowering power and its local analgesic properties suggest its local application in spasmodic conditions of the ureter. (Jour. A. M. A., March 3, 1917, p. 719.)

Dating of Biologic Products.—For the protection of the consumer as well as the manufacturer, the Council on Pharmacy and Chemistry has adopted a rule requiring that serums and vaccines and similar products to be accepted for New and Nonofficial Remedies must bear on its package the date of its manufacture in addition to the date required by federal law. The practice now followed by manufacturers of placing on the containers of biologic products the date beyond which these agents are not to be regarded as dependable (though in accordance with the federal law) has not been satisfactory. Except for diphtheria and tetanus antitoxins, in general there are no methods for determining the poteney of serums and vaccines. At the present time, for the same material, one manufacturer will fix an expiration date of four months, others one year or even eighteen months. Obviously this lack of uniformity is unfair to the manufacturer who endeavors to supply a product as fresh as is commercially practicable and it also may lead the physician to form a false opinion regarding the potency of certain biologic products. The new rule of the Council will enable the physician to know the age of a given product when it reaches him and will permit him to judge whether or not it has been kept unduly long. Moreover, it will prove not only helpful to the conscientious manufacturer and the physician but will also safeguard the patient. (Jour. A. M. A., March 3, 1917, p. 728.)

Another Shortage of Salvarsan.—The indications are that the supply of salvarsan and neosalvarsan in this country has again reached the point of exhaustion. Congress, whieh made our patent law, has the power to suspend the patent on any preparation that the patentee is unable to, or does not supply, when such suspension is in the interest of public health, and it should suspend the salvarsan patent. In the meantime it is to be hoped that the Dermatological Researeh Laboratory of Philadelphia will again supply the product as it did during the previous salvarsan shortage. (Jour. A. M. A., March 10, 1917, p. 785.)

Control of Intestinal Baeteria.—A recent investigation indicates that the direct feeding of bacterial cultures of lactic acid-producing organisms had almost no influence on the intestinal flora. On the other hand the administration of milk sugar (lactose) brought about a marked change in the intestinal flora. It appears therefore that the beneficent action of milk cultures is dependent on the lactose and not on the baeteria which they contain. (Jour. A. M. A., March 24, 1917, p. 918.)

Active Prineiple of Leeches.—The principle in the buccal secretion of the leech which prevents the clotting of blood is herudin, a deutero-albumose. Jour. A. M. A., March 24, 1917, p. 931.)

Betaine Hydrochloride.—It contains 23.8 per cent. absolute hydrochloric acid and 8 grains corresponds to about 18 minims of diluted hydrochloric acid. In solution betaine hydrochlorid dissociates into hydrochloric acid, but it is not so efficient in aiding the action of pepsin as an equivalent amount of hydrochloric acid. (Jour. A. M. A., March 24, 1917, p. 931.)

The Sargol Case.—The exploiters of Sargol, the get-fat-quick nostrum, were found guilty of fraud and were fined $30,000 after promising that the business would be discontinued. Sargol was made by Parke, Davis and Co. at a price of 53 cents to 78 cents per thousand tablets. Sargol was stated to contain extract saw palmetto, calcium hypophosphite, sodium hypophosphite, potassium hypophosphite, lecithin, extract nux vomica. The trial is said to have cost the United States over $100,000. Although the business was palpably fraudulent, although the elaims made for the nostrum were palpably false, the defendants were able to employ physicians to go on the stand and swear that Sargol was a "flesh builder" and "bust developer." (Jour. A. M. A., March 24, 1917, p. 927.)

Succus Cineraria Maritima.—In agreement with the report of the Council on Pharmacy and Chemistry holding the claims made for Succus Cineraria Maritima (Walker) unfounded, the federal government charged that the elaim that by dropping this preparation into the eye cataract may be cured was false and fraudulent. In February 1916 the Walker Pharmacal Company pleaded guilty. Since the government's prosecution, brought under the Food and Drugs Act, affects only the claims made on the trade-package of a preparation, the admittedly false elaims were still made in circular letters sent to physieians as late as October, 1916. (Jour. A. M. A., March 17, 1917, p. 864.)

Rheume Olum.—The Council on Pharmacy and Chemistry reports that Rheume Olum (The Rheumeolum Chemical Co., Seattle, Wash.), is said to be composed of camphor 7 per cent., chloral hydrate 7 per cent., menthol $2\frac{1}{8}$ per cent., methyl salicylate 25 per cent., oil cajuput $2\frac{1}{2}$ per cent., oleoresin capsicum, lanolin, white wax, "q.s." The Council found Rheume Olum unacceptable for New and Nonofficial Remedies because the amount of the potent oleoresin of capsicum was not declared, because unwarranted therapeutic claims were made, because the name was nondescriptive of its composition and therapeutically suggestive and because the fixed formula was considered irrational. (Jour. A. M. A., March 17, 1917, p. 865.)

Ichthytar.—The Council on Pharmacy and Chemistry reports that Ichthytar was submitted by the Szel Import and Export Company with the claim that it was essentially similar to ichthyol in composition and superior to it in therapeutic properties. The statements that were submitted regarding its composition made it impossible to determine whether or not it was similar to or identical with ichthyol. No evidence was furnished in regard to its therapeutic value. On the basis of the available information the Council held the claims regarding composition and therapeutic value unsubstantiated and ichthytar ineligible for New and Nonofficial Remedies. (Jour. A. M. A., March 10, 1917, p. 796.)

NEW AND NON-OFFICIAL REMEDIES 1917.

New and Nonofficial Remedies, 1917, contains descriptions of the proprietary and unofficial medicaments which the Council deems worthy of recognition by the medical profession. Every physician who desires to further the cause of scientific prescribing, who is anxious to see this country purged of the blight of the nostrum, and who desires to aid in diminishing the domination of commercialism in therapeutics in this country should have a copy of this book for ready reference.

The Annual Reprint of the Reports of the Council on Pharmacy and Chemistry,

for 1916, contains the reports of the Council which were adopted and authorized for publication during 1916. It gives the reason why preparations which have been considered by the Council were admitted to New and Nonofficial Remedies. It also explains why certain preparations included in previous volumes are not contained in the latest (1917) edition of New and Nonofficial Remedies. Up-to-date physicians should possess the Annual Council Reports, as well as New and Nonofficial Remedies.

New and Nonofficial Remedies will be sent postpaid for $1.00 and the Annual Council Reports for 50 cents, by the American Medical Association, 535 North Dearborn street, Chicago.

W. A. PUCKNER, Secretary,
Council on Pharmacy and Chemistry.

THE APRIL MEETING OF THE STATE BOARD OF HEALTH.

The regular meeting of the State Board of Health was held in Sacramento, April 7, 1917. There were present: President George E. Ebright, Vice-President F. F. Gundrum, Secretary Wilbur A. Sawyer, Dr. Robert A. Peers, Dr. Edward F. Glaser and Dr. Adelaide Brown.

President Ebright, Chairman of the Committee on Public Health and Hygiene of the State Defense Council, presented a report, outlining the work that must necessarily be undertaken by the various bureaus of the State Board of Health under the new State Defense Act. Dr. Ebright placed special emphasis upon the importance of the control of water supplies and sewage disposal facilities, the work of sanitary inspections, the eradication of malaria, the examination of foods, and the preparation for increased work in epidemiology. Dr. Ebright's report also touched upon the necessity of preparation for expert work in bacteriology.

The proposed five years and three months' course of training at the Lane Hospital, San Francisco, was accepted as meeting in full the requirements of the Nurses' Registration Act for an accredited training school.

The action of the Secretary in appointing Professor W. B. Herms and Mr. Stanley Freeborn of the University of California to continue mosquito survey work during the present year, without salary, was confirmed.

In accordance with the recommendation of the Director of the Bureau of Tuberculosis, the Santa Clara Hospital was placed upon the list of hospitals eligible for the state subsidy.

In accordance with the recommendation of the Director of the Bureau of Sanitary Engineering, permits for supplying water to consumers were issued to the city of Lodi, the Hayward Water Company and the Marysville Water Company.

The Secretary was authorized to appoint employees of municipalities and public service corporations as inspectors of the State Board of Health for the purpose of patrolling watersheds under the direction of the Bureau of Sanitary Engineering.

More than one hundred food and drug cases next came before the board and were passed upon.

W. A. SAWYER, Secretary.

NEW MEMBERS.

Abbott, P. F., Oakland.
Devine, C. T., Oakland.
Harbeck, Chas., Hayward.
Hanley, Jas. C., Hayward.
Smith, A. C., Oakland.
Shade, M. A., Oakland.
Johnson, Edwin E., Concord.
George, W. S., Antioch.
Deissinger-Keser, M., Richmond.
Fraser, W. W., Richmond.
Vestal, Hall, Richmond.
Breneman, J. T., El Cerito.
Martin, Wallace P., Fresno.
Christal, Chas. H., Eureka.
Bittner, C. L., Sacramento.
Crawford, J. W., Sacramento.
Hale, Nathan Geo., Sacramento.
Lyman, Timothy, Sacramento.
Munger, Arthur Lee, Jr., Sacramento.
Zimmerman, Harold, Sacramento.
Evans, H. R., Trona.
Strong, D. Chas., San Bernardino.
Peddicord, Harper, Fort Bragg.
Stout, Geo. W., Ukiah.
Liftchild, Judson, Ukiah.
Gordon, S. B., Salinas.
Davis, W. W., Brea.
Boyd, J. P., Santa Ana.
Ryan, L. M., Banning.
Green, Jonathan, San Francisco.
Tavlopoolos, Jno. N., San Francisco.
Casper, Ervin J., San Francisco.
Hurwitz, Samuel H., San Francisco.
Smithwick, J. M., Byron Hot Springs.
O'Neill, A. A., San Francisco.
Tobriner, Oscar, San Francisco.
Thomas, R. W., San Diego.
Dunlop, Florence, San Francisco.
Fife, Joseph, San Francisco.
Cookinham, F. H., San Francisco.
Harvey, Richard W., San Francisco.
Green, Jonathan, San Francisco.
Eude, F. Macbeth, Pasadena.
Hall, Wm. Ethelbert, Los Angeles.
Littlefield, E. W., Los Angeles.
Morrison, W. A., Los Angeles.
Stookey, Byron, Los Angeles.
Zarraga, Fernando, Los Angeles.
Rumwell, M. E., San Francisco.
Parsegan, J. E., San Francisco.
Fujimori, N., Los Angeles.
Johnson, C. A., Los Angeles.
Lettice, Fred E., Los Angeles.
Newcomer, Paul W., Los Angeles.
Bishop, F. C., Los Angeles.
Friedman, Maurice, Los Angeles.
Jesbery, Simon, Los Angeles.
Campbell, Matthew, Los Angeles.
Boonshaft, Louis, Los Gatos.

RESIGNED.

Plincz, John K., San Francisco.

DIED.

Gochenauer, David, San Diego.
Dozier, Leonard F., San Francisco.
Parsons, Carl Gehr, Hollywood.
Magnus, Max, San Francisco.
Brune, August E., San Francisco.
Richard, Henry Endicott, Oakland.
White, John L., Sacramento.
Horton, Theron W., Honcut.
Elmer, Clyde Jason, Los Angeles.
Rosencrantz, Nathaniel, San Francisco.
Felt, Rae, Eureka.
De Puy, Anson A., Oakland.
Pollard, John W., Los Angeles.
Noble, Paul B., ———.

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MEDICAL DEFENSE RULES AND THE LEGAL DEPARTMENT.

An unusual feature of the recent annual meeting of the House of Delegates at Coronado was the attendance of the General Attorney for the Society, and an address by him upon the subject of the work of the Legal Department. The Council, in view of the increase in volume of the malpractice claims and the growing complexity and importance of this branch of the Society's activities, requested the attendance of the head of that department in order to bring the members more closely in touch with its functions and activities. Unquestionably this step has been productive of great benefit to our organization. Heretofore interest in legal affairs has been confined too closely to the particular member involved and the necessity for, and the scope and effectiveness of, this bureau has not been appreciated by the members at large.

Pursuing the same policy, the Law Department at the direction of the Council has revised and restated the Medical Defense Rules, and a copy of these rules has been sent to the Secretaries of each component County Society. It is earnestly hoped that these rules will be read at meetings of each County Society and that each member of the Society will thoroughly acquaint himself with the provisions thereof. In discussing and considering these rules it should be borne in mind that they embody the experience of those who have had charge of the Society's affairs for many years and that they represent the combined judgment of men trained to handle matters of this type, having in mind always the limitations and exigencies which confront administrative officials in an organization such as ours.

It is furthermore suggested that if a rule does not appeal to any individual member as being a proper one or appears subject to criticism in any manner, that that member's best interests and the best interests of the Society should lead him to write to the Secretary's office with his suggestion or criticism, so that it can be acted upon, possibly producing a better statement or proper modification of a given rule. Or the experience of the Council when given to the member in answer to such comment may cause the member to change his mind as to the justness of the criticism. By such means we shall secure co-operation and mutual help.

At the earnest request of the Legal Department we wish to emphasize the necessity of the strict compliance by each member with each and every one of the Medical Defense Rules. They number seven in all; the language is very plain, and, as our Chief Counsel said in his address to the Delegates, every member is interested because he can never know what day will make the Legal Department and the Medical Defense Rules matters of intense personal moment to him.

THE INDEMNITY DEFENSE FUND.

The trustees of the Indemnity Defense Fund organized as a board at the recent State meeting. The Council, after several months of intensive work, has adopted the rules and regulations governing the fund. The Secretary of each of the County Societies has been furnished with a sample copy for inspection by the members. We urge upon each County Society that the communication from the Secretary's office on this subject be placed before the members of each respective County Society at an early date.

With the fund now established, its administration fixed, and the conditions of joining definitely determined and settled, every member should give this subject his thoughtful attention. We will have more to say upon this question in the next issue.

TETHELIN PRESENTED TO THE UNIVERSITY OF CALIFORNIA BY DOCTOR ROBERTSON.

Dr. T. Brailsford Robertson, Professor of Biochemistry and Pharmacy in the University of California, has donated to the Regents of the University of California his patents for the growth-controlling substance, Tethelin, which he has succeeded in isolating from the anterior lobe of the pituitary body and which has been employed to accelerate repair in slowly healing wounds. The proceeds which may accrue from the sale or lease of these patents are to constitute a fund which will be entitled, "The University of California Foundation for International Medical Research," and which will be expended in the furtherance of medical research, preferably research in the physiology, chemistry and pathology of growth.

HAVE YOU ENLISTED?

I desire to call the attention of the medical men of this State to the situation which confronts them in the present crisis. The Government has issued a first call for 500,000 men, to be followed by a call for 1,500,000 more as soon as the first draft is filled.

The work of enlistment is already on and the medical department of the army is having great difficulty in handling their end of the situation on account of the lack of doctors. An army cannot be recruited without an efficient medical corps, and it behooves every medical man in this State to exert himself to the utmost to assist the Government in its undertaking.

There are several different branches of the medical service to which the medical man may attach himself: the regular army, the medical section of the officers' reserve corps, the regular navy, the naval reserve, and the Red Cross base hospitals.

The regular army and navy accept men up to the age of 32 years, the army reserve corps up to 55 and the navy reserve up to 47 years of age. The first call will naturally be made for the younger men, especially those who have no dependents, next the middle-aged men without family, and in case of urgent necessity, such as England has already experienced, every medical man in the State may be compelled to enroll in the Government service.

An appeal is therefore made to every physician and surgeon in the State to be ready and willing to serve his Country, and enlist as soon as possible, so that when the Government calls it will find the ranks filled and will not be compelled to resort to drastic measures to get the necessary number of medical men.

J. Henry Barbat,
President Medical Society of the State of California.

THE MILITARY SITUATION.

The military situation is rapidly assuming definite form. By the time this issue reaches its readers the registration under the Draft Bill passed by Congress will be effective and all physicians within the age limits provided in the bill—21 to 31—will be potential members of the Army or Navy of the United States. Of this group the quota which California must provide will be drawn immediately into active service. The Secretary of War has issued a statement through the press that the date of reporting for active duty will not be until after September 1st. On that date something over half a million green, untrained recruits will be established in camps throughout the country. These men must be cared for from the start, in the most perfect possible manner. Twentieth century medicine is none too good for those upon whom the country calls to defend the very principles upon which it is founded in order that we, the rest of us, and our children, may be able to live in security and comfort. These recruits must be so protected as to be able to prepare themselves as soldiers of the highest efficiency. Without a full, efficient, highly trained medical arm of the service this is utterly impossible. The work of each member of this must be so explicit, and the functions must so dovetail, that there no branch of the field of modern medicine is omitted. The prophylaxis, the medical and surgical care, the dental and pharmaceutical service, diagnostic aid of the laboratories, the radiographic department, must all be on the job by the first of September. They must not only be on the job, but they must be fully trained. This means that every member of the Medical Corps must receive his course in military training and must play his part perfectly on that day. To accomplish this both the Army and the Navy need a large number of medical men *now*, so that they can be trained for the big work of organizing the camps, and the none less important work of preparing themselves to train those physicians who will come in later in military medicine.

All medical men who have no dependents should enroll at once—those subject to draft, in the regular Army or Navy; those not of draft age, in the Officers' Reserve Corps of the Army or of the Navy.

The appeal of Dr. Barbat, President of the Society, should be heeded, and that at once.

EXAMINATION OF RECRUITS.

It seems to be a common notion among medical men that any physician is good enough to examine applicants for the Army and Navy. The responsibility of the examiner is far greater than would appear on the surface. His task is not merely to determine that the heart and lungs are "negative," that hernia and flat foot are absent, that the spine is mobile, that the subject is not color blind or deaf, and that the urine contains no albumen or sugar. These are but a few of the data from which he must determine the fitness of his man. There are two main questions which are to be answered:

First—Is the applicant such that he will, in all probability, be able to stand the severe and prolonged strain of warfare? During the recent Mexican expedition, in the militia organizations sent to the border from some of the States, well over half had to be returned to their homes as physically unfit for duty. In the early part of the European War, almost forty per cent. of some of the Canadian Expeditionary Forces were rejected after they had been sent to England and France. What a loss of time. What a waste of money at a time when every penny is so sorely needed for purposes so vital. The function of the medical examiner differs greatly from that of the physician in his usual line of work. The physician in practice is concerned with the determination of what is the matter and what can he do to relieve it; whereas the medical examiner must be able to weigh all of the evidence that can be obtained from a subject who presumably has no complaint and from that evidence to pass judgment on the future

physical hazard of the man as a whole. He must know the enormous difference in value between aortic and mitral murmurs, that a hammer-toe is incapacitating, while an ankylosed left little finger means nothing.

The second question concerns itself with pensions. The soldier or sailor who is permanently injured in line of duty, or who becomes disabled because of such injury—and the definition of injury is the broadest possible—is entitled to a pension. If he is killed, his dependents get the allowance. The examination of the recruit must be so thorough and the records must be so clear that pension claims will be allowed to those only who were actually maimed by, or died as a result of, lesions received in line of duty.

The examination should be undertaken by thorough going, well-trained men. Each recruit should be subjected to the scrutiny of specialists for all special tests. The government should demand at least as good service as the average community provides for its indigent sick. It should not countenance methods that are not right up to the minute.

HEALTH INSURANCE.

The Legislature will submit to the people for consideration at the next general election a constitutional amendment which, if carried, will enable that body to pass laws insuring the health of wage-workers whose annual earnings are below a stated standard, presumably $1200. The avowed object of the movement is to so provide for the wage earner that, by paying a small percentage of his wages in the form of a premium to which the employer and the State also contribute, he will be satisfactorily taken care of in case of illness by receiving adequate medical treatment and cash compensation, the amount to be a certain proportion of his annual wage.

One of the master-cogs in the machinery is the physician. Without his cooperation the energy will not be transmitted without undue loss to the part where the power should be most effectual. Legislation cannot produce efficient medical treatment. This is in the hands of the physician alone. The law can, however, be so framed that under its provisions the physician can give his best. If conditions are such that he can, he will.

This all means that we must so study the question as to be able to offer to the Legislature in 1921, should the enabling amendment pass, a practical method by which the profession can play its part with credit, and by which it can give better service to those of limited income without facing financial distress within its own ranks.

The Report of the Committee on Social Insurance is printed elsewhere in this issue, and a close study of its contents is strongly recommended. The Report of the Committee on Social Insurance of the State of California, 1917, and the Transactions of the Commonwealth Club of California, in which the discussions at the meeting of May 9th are printed in full (to appear) are well worth careful perusal.

"THERE BE LAND RATS AND WATER RATS."

If there is anything worse than division of fees among physicians,—if there is a more despicable practice—it is getting a "rake-off" from the appliance-maker to whom the unfortunate patient is referred. But it is done, and it is done often. The merchant who overcharges the patient twenty-five per cent. so that he can remit to the physician is bad enough, but what do we think of the doctor who will countenance such a procedure. How low must be the man whose morals are so depraved that he will accept a fee for his advice, and then mulct his patient out of a fifth or a fourth of the price of the remedy. We wonder how many unnecessary braces and trusses and elastic stockings are prescribed by these unscrupulous educated charlatans for the money there is in it.

The lure held out by the appliance makers must catch some fish, or a house established in 1853 would long have discontinued the practice. Here are two samples in black and white. The Journal has dropped the advertisement of Hatteroth's Surgical House. A few months ago, when the editor was greener than he now is, he inadvertently published their advertisement offering a "discount" to physicians. Not sure what this meant, he telephoned to Hatteroth, who told his nurse it meant that the physician would receive 25% on the price paid by the patient. Mr. Hatteroth was then interviewed and promised to be good. The postcard printed below bears the post-mark date of April 30—so we discontinued the advertisement and publish the card.

The letter from A. A. Marks is so similar that it requires no additional comment.

We are determined to keep the advertising pages of the Journal clean.

Dear Doctor:

Will you please send us your next patient for surgical elastic goods, trusses, etc. We allow a 25% discount to physicians on these goods. Our elastic hosiery, trusses, and supporters are fitted by our experts and we guarantee satisfaction. We will visit your patient either at the hospital or at home without extra charge. Don't forget our Cash Discounts on Surgical Instruments and office equipments are from 15-25%. Our prices are better than anyone else so why not give us your business.

HATTEROTH'S SURGICAL HOUSE,
232 Powell St., 2nd Floor.
Phone Sutter 749.

House Founded in 1853
A. A. MARKS
Inventors and Manufacturers of
ARTIFICIAL LIMBS
With Rubber Hands and Feet
701 Broadway, New York, U. S. A.
January 3rd, 1917.

Dear Doctor:

Yours of the 28th ult., is received. Complying with your wishes, we are mailing under separate

cover a copy of a Manual of Artificial Limbs, hoping you will receive it promptly and find it interesting.

The book contains illustrations, descriptions and prices of artificial limbs for various amputations, also full instructions for taking measurements and diagrams that will enable us to construct and fit without requiring the presence of the wearers.

Our artificial limbs are constructed upon lines of simplicity and durability; many thousands of them have been made for persons residing in remote parts of the earth and in every climate.

We make an allowance of 20% to physicians and surgeons. They are expected to take the measurements and attend to the details of ordering.

Hoping to hear from you again at an early date, we are,

Very truly yours,
(Signed) A. A. Marks,
R.K. per K.

AMERICAN REMEDIES FOR CHINESE AILMENTS.

Bureau of Foreign and Domestic Commerce, Washington.

China will soon be the greatest market in the world for proprietary medicines, according to a bulletin issued today by the Bureau of Foreign and Domestic Commerce, of the Department of Commerce, to call the attention of American manufacturers to the advantages of getting a good foothold in the market at once.

"Hygiene is practically unknown among the Chinese," the report states, "and the sickness and suffering to which the masses are subject on account of the lack of efficient native remedies or treatment is probably greater than in any other country. This is especially true of all varieties of skin diseases, against which no native salves or blood tonics seem effective."

Ten years ago the proprietary-medicine trade in China was hardly worth mentioning, although foreigners had been laboring for twenty years or more to develop it, but immense strides have been made since then and ample profits have been realized. The trade, however, is still in its infancy.

Through judicious and persistent advertising the natives are gradually being educated to the necessity of paying some intelligent attention to their ailments and are responding remarkably well. For this reason it is not difficult to introduce a good article at a reasonable price, if supported by the right kind of advertising.

The Bureau's report is devoted chiefly to sales methods and advertising and the material presented on these subjects is new and important. Copies of the bulletin, which is entitled "Proprietary Medicine and Ointment Trade in China," Special Consular Reports No. 76, may be purchased for five cents from the Superintendent of Documents, Washington, or from any district office of the Bureau of Foreign and Domestic Commerce. It contains twelve pages.

UNITED STATES CENSUS BUREAU REPORT ON CANCER.

The United States Census Bureau has recently published its long-expected special report on the cancer mortality statistics of the United States registration area and its subdivisions, including the States, counties and principal cities, for the year 1914. The American Society for the Control of Cancer takes a just pride in the completion of this work, which was undertaken at its own suggestion and developed in constant cooperation with the Committee on Statistics and individual members of the Board and of the Society, who gave their advice from time to time. The Director of the Census in transmitting the report for publication makes generous acknowledgment of the services rendered by the Society and the members of its Statistical Advisory Board.

This statistical monograph on cancer undoubterly represents the most comprehensive and detailed work of the kind ever published by any government. While making use of an extended classification of organs and parts of the body similar to that which has appeared for some years in the annual reports of the Registrar General of England and Wales, the American report goes further in offering for the first time a separation of the statistics according to accuracy of diagnosis as determined by surgical intervention, autopsy or microscopical examination.

The preparation of this report has occupied much of the time and labor of the Census Office for the past three years. The accomplishment justifies the effort, for the work places this country far in advance in the scientific collection and tabulation of the official mortality statistics of cancer. The foremost students of the disease have long agreed as to the importance of statistical investigations in throwing further light on the causes of cancer, and have urged that the official returns show the number of deaths in full detail according to organs attacked, and with due regard to age, sex and race. In answering this demand the United States Government has made a notable contribution to the scientific study of this formidable and apparently increasing scourge.

The report can be obtained by writing to the Director of the Census, Washington, D. C.

THE J. HENRY BARBAT PRIZE.

Dr. J. Henry Barbat, President of the Society, offers a cash prize of $50.00 for the best paper presented at the meeting at Del Monte in 1918. Papers on original subjects are to have preference. A jury of five members, appointed by the Council, will have final jurisdiction in the distribution of the prize.

DR. GEORGE H. KRESS.

Our retiring President, for the year 1917, of the Medical Society of the State of California, Dr. George Henry Kress, of Los Angeles, was born at Cincinnati, Ohio, on December 23, 1874.

He was a Hughes High School graduate, a Bachelor of Science in Biology of the University of Cincinnati, Class of 1896, and an M. D. from the same institution in 1900.

He was a resident physician of the Good Samaritan Hospital, Cincinnati, during 1900, and then, until 1903, an Assistant Surgeon at the National Soldiers' Hospital at Dayton, Ohio, at which latter institution he was also the house surgeon of the late Dr. Duff Greene, America's special exponent of the Smith Indian Cataract operation.

Dr. Kress appeared in California in June, 1903, taking up his residence in Los Angeles at that time. His specialty is eye, ear, nose and throat, but he early became identified with medical organization and philanthropic and college work as side hobbies. In the early days of his California career he also edited the Southern California Practitioner.

The tuberculosis problem of California early became a subject of study with him, and in the pioneer days he founded and edited the Bulletin of the State Tuberculosis Society, being at different times President of both the State and Los Angeles Societies for the Prevention of Tuberculosis, and later the Chairman of the State Commission appointed through act of the Legislature to bring in a report on this big public health problem. The present State Bureau of Tuberculosis and the subsidy to county hospitals were first outlined in the report of that commission.

For some years he officiated as Secretary of the

Faculty of the College of Medicine of the University of Southern California, and when that institution became a graduate school under the name of the Los Angeles Medical Department of the State University of California, he became the Dean of the latter institution.

In medical societies he has always been an interested worker and was for many years the Councilor from the Los Angeles district in our State Society.

In the Los Angeles County Medical Association, as the Secretary-Treasurer and Executive Officer, it has been his privilege to institute many movements that have made for the stronger development of that unit of our State organization. In a literary way, Dr. Kress has also contributed freely to scientific journals on the topics in which he is interested.

He was elected a Councilor-at-large at the recent San Diego meeting, and in that capacity our State Society hopes to have the continued use of his broad experience on the many matters of medical organization which nowadays seem to confront us in such large measure.

ORGANIZED MEDICINE—A CONSIDERATION OF SOME OF ITS CALIFORNIA PROBLEMS.*

By GEORGE H. KRESS, B. S. M. D., Retiring President, Medical Society of the State of California.

Custom prescribes that your retiring president shall deliver an address on some subject related to the profession of medicine.

The topic on which I shall speak may to some of you, in one sense, seem to be somewhat non-scientific, but even so, it might still be possible that it is perhaps much more needed by our State Medical Society than a dissertation on some purely scientific subject.

Let it first of all be distinctly understood that what is here presented, no matter how seemingly dogmatic its mode of presentation may appear, is offered only and absolutely in the way of suggestion.

It is also quite possible that the viewpoint given may be in error, but if this be the case, it has at least the merit of having been founded on years of a rather active experience in the largest county medical unit in our State, so that some of the items discussed may perhaps be of value to others.

In the first place, permit me to state that I am not only in hearty accord, but a very firm believer in the system of organization of our medical societies as inaugurated by the American Medical Association in 1900, whereby, instead of a loose organization composed of national, state and local societies of miscellaneous grouping and scope, there has come into existence one powerful national association—the American Medical Association—made up in turn of the state societies, and these on their part consisting of local organizations known as county associations.

In this plan of the so-called reorganization of the American Medical Association, the mode of admission and of membership into any one of these three types of societies, namely: the national, the state or the county units, is by the invariable route of the county unit, in the place where the applicant is practicing his profession, and where his career is necessarily best known, admission to the county unit making the applicant at one and the same time a member of his respective state society and of the A. M. A.; fellowship in the last named, with subscription to the Journal, being conferred when an additional fee of five dollars is paid.

This review of the plan of organization is given to show both its simplicity and practicability. As to its efficiency, the chaotic condition of organized medicine in national, state and county units prior to the year 1900 is still vivid in the memory of many of us, and the wonderful advance since that period we may in very large part ascribe to this newer and far superior method of operation, for which we may indeed be grateful, and which we should be very slow in changing to any great extent. Let us try to keep in mind that such deficiencies as exist under this plan are more often manifestations of weakness of administration rather than of weakness of the plan itself.

Through this excellent and businesslike reorganization of the American Medical Association and of its respective state and county units, there has come about, not only an almost marvelous betterment in the scientific and business proceedings of all three types of organizations; and because of the much sounder financial condition of the national organization, it has been possible for the American Medical Association to step beyond its one-time perfunctory routine of being nothing more than an organization which once a year permitted a small number of members to come together in scientific and social sessions, and to take on activities which have played an almost marvelous part in placing the practice of medicine on a higher plane in America.

Of such, may be mentioned: the publication of a very high class scientific and yet very financially remunerative Journal; the work of the Council on Pharmacy and Chemistry, which has done splendid service in eradicating much of the patent and proprietary medicine evils; the propaganda of the Council on Health and Public Instruction, through which work of the very highest type in preventive medicine, has been constantly inaugurated; the program of the Council on Medical Education, by means of which the deplorable conditions associated with proprietary medical schools have not only been in good part eliminated, but the basis at last laid, in many of the larger cities, for offering medical training of such splendid scope and facilities as to make our American medical schools, in these last fifteen years, to change from what might be called a stench to our ideals, to a condition in which no country in the civilized world will be able in the very near future to offer anything that is one whit better.

Now, all these things, when we get down to the very bluntness of the situation, we must in a good part ascribe to that splendid plan of reorgan-

* Address of the Retiring President, Medical Society of the State of California, at the Forty-sixth Annual Meeting, San Diego, California, April 17, 1917.

ization of the American Medical Association, instituted in 1900, and to nothing else, and by means of which that organization was able, first, to outline for its subordinate units an efficient method of self-government; while, second, for itself, it was enabled to accumulate the funds whereby it became independent and of sufficient power and wealth to permit at least some of the ideals and aspirations of its members to reach actual realization, in such special domains as scientific research, public health procedures, higher standards of medical education, elimination of patent medicines, and so on.

It may be quite true that there may be one or more other and different methods of bringing about the realization of the ideals of the medical profession of these United States, which methods or plans, idealistically considered, may seem more desirable than the rather practical and common sense plan now in vogue in our country; but certainly the exponents of such supposedly better and more ideal plans of organization will have a tremendously hard time explaining away the deplorably low state of organized medicine in the days prior to 1900, as contrasted to the remarkable progress made by our national and our various state and county units since that period of reorganization.

With these words on our general system of organization, permit me now to digress, so that I may present some thoughts of a somewhat more local and practical and perhaps detailed nature, which may be worthy of consideration in connection with the subject of organized medicine as related to the state and county units in California.

To begin, let us ask ourselves as to the actual objects, which in a broad measure we seek to attain in our county societies, and which in most commonwealths, where economic, geographical and political organization of counties and state be not too diverse, might be said to apply with almost equal force to our state societies as well.

In the first place, in all groupings of organized medicine, I think we may assume that we get together and form societies in order to learn how to better do the work in this particular profession which we have chosen as our life work. In other words, we seek through our societies to help make of ourselves better doctors, and we get together and form societies, in an effort to bring about this end.

Now, just as the practice of medicine is itself both an art and a science, so do we find that in our societies we must take into account something more than the purely cold-blooded scientific phases of our profession. For, if it were only the question of the absorption of scientific information, it is quite possible that this could be obtained just as well by many of us from the scientific publications of medicine, and with expenditure of less time and effort, than through medical societies.

As a matter of fact, when we analyze our medical organizations we find that we both seek and derive much more than a simon-pure scientific pabulum from them; and that the something more, which often is quite as important as the scientific food, may be said to be the good fellowship and better social and professional understanding which comes from actual personal and social intercourse and contact with colleagues whose lives, like our own, if left to the natural routine of professional endeavor, are little more than somewhat isolated and very personal existences.

It may be further noted that it has been this personal and scientific isolation, with community of interest more between ourselves and our patients than with our professional colleagues, that has been at the bottom of so much of our ineffective attempts at co-operation in the past, and which even to-day exists with sufficient force to nullify much of the influence to which, in individual and public health work, the medical profession is in one sense so fully entitled.

Now, herein, we have a further fact for very sober reflection, and that is this: that in many communities, in spite of a splendid system of organization, whereby we can work through constituted officers and authority to express our viewpoints, the great mass of our fellow-members fail to give that practical co-operation and support in public health measures which the nature of our political organization in civil life demands, if the public health aims to which we are devoted are to be properly attained.

It may be a noble thing to be wedded to ideals, but facts are facts, and while the days and environment in which we live demand that we continue to be loyal to ideals, we nevertheless should mold our course of action along those lines which will actually give results.

For we cannot get away from the fact, be it a reflex of the superficial type of newspaper and magazine education so prevalent now-a-days, or what not, that scientific and preventive medicine receives but faint and half-hearted support from the very laity whom it is primarily intended to serve.

Of course, the explanation in good part is this, that we who have delved and obsessed ourselves with our scientific problems, have failed almost utterly to sufficiently take our lay fellows into our consideration or confidence; and we are tremendously shocked, and usually quite disgusted, when we launch an absolutely altruistic public health measure to find a majority of our legislators, in response to more vigorous and more successful education from faddish and vicious sources, almost always arrayed against us.

Now, all this line of thought that has just been given is intended to simply bring out the concept that for some reason or other, we medical men, not alone as individuals, but often through the constituted officials of our medical organizations, lack a certain amount of that thing which by the name of common sense is known and made use of by our practical fellow laymen, who with far lesser light or right, often attain far greater success in the measures for which they choose to be propagandists.

And that is the very special plea which this address would make to you fellow doctors of California,—that you display just a bit more of the common sense which your education warrants all

men in believing you ought to have, and that you exert your common sense efforts in such excellent co-operative spirit as to actually attain the results by which your ideals in part or in whole, may come to be realized.

Let us, therefore, not blame our fellow laymen entirely. They are willing to follow us if we will explain clearly what and why we want certain meritorious laws.

Let us illustrate this by a concrete California case. We know, that for years, all that we have sought in the way of laws which have to do with the granting of the legal right by the State of California to practice the profession of the healing art, has been a set of legal provisions, whereby only properly prepared practitioners should be permitted to hold themselves before the public as competent persons in a profession, whose members so often have the responsibility of almost holding life and death in the hollow of their hands. Now, that is a simple thought and properly explained and amplified, one to which the great majority of laymen gladly subscribe; namely, that when any of them calls in a legally licensed doctor, that such doctor shall be a practitioner actually competent to treat injury and disease. Of course, in framing a law to such an end, many difficulties are met with, but with the majority of the laity in favor of the fundamental proposition, it may be assumed that the majority of the state legislators could also be made to see the matter in the same way. And yet, we all know the recurrent fights in each Legislature of California on all matters dealing with state medical licenses, in which year after year, we have suffered this, that or the other partial defeat.

Our trouble comes when we seek to place such a law on our statute books, in that we ourselves get away from the fundamental, basic, actual truth of the proposition, and permit faddists and vicious commercialists to becloud ourselves, the legislators, and the issues at stake. We are, seemingly, too proud (and we ought to add, also too blind) to use the methods of procedure everywhere in vogue with legislatures, by our lay fellow citizens, whereby they accept our system of government as it is, and without degrading themselves or debauching legislators or others, gladly avail themselves of all procedures whereby legislators may the more easily and clearly see the real purpose of proposed laws, and the more glady support those which stand for the best and highest interests of the people at large.

At the time this paper is being written, our present California Legislature is in session, and the usual grist of laws having to do with medical licensure have been submitted. It is a fair question to ask, how many of those present in the sound of my voice have actually done something to see to it that the right kind of laws will be enacted? We might even go farther and ask how many county units have done active work? Yes, and even farther, and ask, what has our State Society done to keep in that really active and vigorous touch with the Sacramento situation, which is in vogue by lay organizations having far less meritorious interests at stake than ourselves?

Have we as individuals, or as county, or state units used the methods in actual practice by Chambers of Commerce, public ultility corporations, other professions and special interests, to see to it that there was on our behalf at least one representative, be he layman or medical man, at Sacramento, whose work it would be to see to it that we were all of us kept in constant touch with the trend of opinion of our legislators on these public health measures?

If there be among you those who would be shocked at this thought of a paid Sacramento representative to watch the situation and keep the rest of us informed (mind you, let no one say, that I advocate a representative improperly to solicit or debauch), then I would ask such of you as have this horror, what you of yourselves did prior, and after, the election of your respective state legislators to educate them on these public health matters now being considered at Sacramento; and granting that you did your own particular part in certain particular instances, whether or not you think you showed good common sense in imagining that your lone effort, if unsupported by like effort by every other county unit and by other members, would amount to very much.

Of course, in the good old days when legislators were controlled by a few bosses, it was not so necessary to so constantly be on the job. In those days, influence with the one particular right man took care of the entire proposition. But now-a-days things are different.

But because they are different, must we refuse to play, and sulk, and, after calling everybody else ugly names, wrap ourselves in a mantle of righteous self-glorification and self-satisfaction?

Granted that it may be proper to wrap one's self in that kind of a mantle, is it creditable to do so? Is it common sense? Is it fair to our profession and what we would have it attain? Isn't it really a foolish, egotistical and ridiculous attitude to assume?

Now, the solution of all this is simple, and that is, that we obtain a better understanding of ourselves, our profession, our objects in professional life, and especially of the means to be used in attaining these objects. Permit me along this line to offer a few practical and what I construe, important suggestions, even though to some of you they may seem commonplace and not pertinent to thought on so dignified an occasion as this.

First, let us start with our basic or county society unit. Let us recognize that we must have a good practical constitution and by-laws so drafted as to permit the scientific and social ends of our county units to be most easily and persistently carried on. Our larger county societies have printed copies of their rules of government and these they will gladly send to other units. With modifications for local environments, they can be made to do service almost everywhere.

Then, let us appreciate that *quite as important as our scientific sessions, are the social features of*

our county societies, and that nothing so much helps the development of better personal understanding among members, as informal buffet luncheons, whereby members linger after meetings, to enjoy one another's fellowship and become better acquainted. Only in that way, can we keep down to a minimum, the professional jealousies and misunderstandings, which, because of the nature of our work, have so splendid an opportunity to develop, and which we must acknowledge so often unfortunately do develop. The Los Angeles County Medical Association has for years had such buffet suppers after all its meetings, and I am personally convinced that were we to do away with that feature of the Los Angeles meetings, that then we would again drift back to the old days of personal antagonism and so-called cliques.

Annual banquets, formal or informal, or annual picnics for smaller societies, are other measures along the same line as the foregoing.

Another thing is to properly segregate work among special committees, and to induce our *County and State Society committees to actually do their respective work.* In Los Angeles (if you will permit these references to the unit with the work of which we are most familiar), we have lately inaugurated the plan of having all the committees meet together several times during the year, as a sort of a committee of the whole, in order to create better an enthusiasm in the various lines of work. This we do at an informal supper prior to one of the regular meetings. The tendency in committee work is to either do no work or unload all work on the one, two or three executive officers of a society. This is wrong, and wrong not so much because it throws an undue and unfair share of the work on a few who may at times be perfectly capable or willing to accept this burden, but wrong because thereby the other committee members who are supposed to become interested in special problems, fail to do their part, and the capacity for effective co-operation in the society at large, is just that much lessened, and then in big, vital issues, our disjointed efforts are apt to be rewarded by failure.

In our larger county units, *printer's ink should also be generously used.* Suppose it does cost money to print things, if the end result is to make a stronger and more unified society, the money will not have been spent in vain. Our societies are loosely organized; they need a vehicle of communication in the shape of some sort of a bulletin, which will tell them what is going on.

Second, as regards our State Society, is it not true that this State Society of ours, is after all, only a very large county society?

We should recognize, for instance, that in our State Society we have the opportunity of coming together only once a year. Let us hereafter see to it, that in our three days' session, we *come together always in an environment that will permit us all to live in as intimate social contact as possible.* In this big state of ours, there are three large hotels which especially offer these advantages; namely, the Del Monte at Monterey, the Hotel Potter at Santa Barbara, and the Hotel Coronado at San Diego. When we have our meetings in these places, all of us practically housed under one roof, the advantages for better social intercourse and exchange of opinion and of agreeing on one course of action, are far greater than when the members are scattered in a half dozen or more different hotels. The idea that a state meeting helps the local county society greatly and that we ought on that account to go to the different smaller cities, is, I think, a great mistake. The local societies could spend the money for entertainment to far better advantage on their local needs than on entertaining out-of-town members. Moreover, local city members are the poorest of all in attendance. If, therefore, the county associations are not greatly benefited and the State Society, decidedly not benefited, let us follow the system which past experience has shown to be so excellent, and cling closely to Del Monte and Santa Barbara and occasionally to San Diego. I advocate this plan because I so thoroughly believe in its value to our State Society.

I hope that the *plan of synopses of the scientific papers,* which was this year introduced, will hereafter be the accepted procedure for all accepted scientific papers. When I requested the Council to authorize me to work on this matter, in conjunction with the Committee on Scientific Program, I felt that if this plan could be inaugurated, it would be a big step forward in securing more interest in the annual meetings, and in bringing about much more pertinent and valuable discussions. Through the good work of our Scientific Program Committee, an excellent standard has now been set, which, it is hoped, will not be departed from in the years to come. Our different scientific sections, by proper resolutions, should instruct their section officers to call for the same procedure on the part of all section members.

It is a source of great regret to me that the finances seemed this year to make it appear impossible not to have *medical stenographers* for each of the scientific sessions. Personally, I think this expense one which our State Society might legitimately have contracted, even though the state funds for the moment, were low. Certainly the printed proceedings in our State JOURNAL would have been just that much more interesting to members not attending the annual meeting. A medical stenographer should be placed at the disposal of each scientific section, because this plan will make for better meetings and for better reports in the JOURNAL and thus for a really stronger State Society. If the plan has partially failed in the past, it was probably due to the defective manner in which we tried to institute the system.

As regards legislation having to do with public health matters and licensure of practitioners of the healing art, I believe our State Society should do much more active and more effective work than it seemingly has, during the last several sessions of the Legislature. I believe our Society should have a paid representative at Sacramento, who could be either a regular employe of our Society, or who might be some former member of that body (whose past record would be an evidence of his integrity)

and who, while perhaps doing similar service for Chambers of Commerce and others, would make it part of his work to send out bulletins to the State Society and the county units, keeping them informed as to location of bills in committees, names of special antagonists, and so on, so that all county units might lend a helping hand in aiding in the passage of much to be desired legislation. This year the southern counties created such a fund in order to do their bit, but this is a work not for a part, but for the entire state.

Whether the plan just advocated is the one most worthy of adoption may be a question, but that our present comparatively inactive State Society co-operation in legislative work is also undesirable, cannot be disputed.

Mention of the value of printer's ink was made in connection with county society activities. It is equally valuable and important in State Society matters.

With the passage of the new state law for an additional state license tax, taxing all doctors $2 yearly, for which sum each doctor so taxed receives a state board medical directory, it would seem to be no longer necessary for our State Medical Society to publish an annual directory. *However, a year-book of some sort,* to be sent without cost to every member, and which because of the lesser expense, could perhaps be made to pay for itself from its advertisements, might not be out of place. Such a year-book could contain all that information which, not only new members, but which many old members at times desire. The rules of our malpractice defense, of our indemnity fund, our fee tables, our constitutibn and by-laws, the rules of our scientific program committee, the lists of our officers and committees, and probably also the simple list of names of our members by geographical location, all could serve a distinct purpose in such a publication. Certain portions thereof would probably be the same from year to year, and if electroplates were made for such portions, the expense could be materially cut down. The entire arrangement of the subject-matter should, however, be so logically and clearly arranged, and so well indexed, that even they who run, might read.

In connection with this subject of printer's ink, the question might also arise as to whether the plan of *correspondents from the various societies to the State* JOURNAL could not be again taken up. The human interest element is a vital one among all groups of men, and to take cognizance thereof, need not lead us to depart in the least bit from the scientific standards of the original papers contributed to our State JOURNAL.

Other societies do these things and to their advantage, and we may well ask ourselves whether similar measures would not be of benefit to us.

Your president has long been impressed that through our State Society many things could be instituted to the benefit of all county units, once such measures had been found of value in individual county societies.

Why should not the State Society, which is so tremendously interested in having every desirable practitioner in California a member of his county unit, carry on *an active campaign for new members,* instead of leaving this work almost entirely to the haphazard efforts of county secretaries? In this and in many other matters, our State Society might well have *standard printed forms* in stock which our smaller county units could purchase at cost. The dues of a few extra members secured through such paternalistic effort by our State Society officials, would more than pay the cost of printing, and the Society itself would be the gainer, not only through the addition of new members, but also through the better co-operation of county society officials with those of the State Society. It must be remembered, however, that state officers who take up this work must be medical organization optimists, and be willing to try out and repeat these measures again and again, even though there is but feeble co-operation in the beginning. If the fundamental idea is sound, repetition of effort, if along practical lines, is bound to ultimately bring good results.

We have always been impressed with the fact that *we cannot make our county and State Society membership too rich in material advantages.* In other words, we should aim to give every member such a large amount of material benefits for the money which he pays in dues that no matter what those dues are, he cannot but feel, that as a financial proposition alone, county and State Society membership is absolutely indicated for every ethical practitioner of medicine.

Along that line *a telephone exchange,* especially for our larger cities (such as that of the Los Angeles County Medical Association, which some three years ago started its existence with a total of less than three hundred calls in its first month, and which since that time has worked up to an average of over 10,000 calls per month) is an excellent example of society effort which works to the advantage of all members, but especially to the younger and newer members from other communities, and thus is a very big incentive to inducing every new doctor in the community to seek membership in his county medical society.

Another instance was *the collection slips* for patients delinquent in their payments, which were used several years ago. A few cents' expenditure by the State Society would place these in the hands of every member and would make many members grateful for this co-operation and much more willing to have $1 more of their dues be sent from their county to their State Society.

Moreover, in this particular matter, in teaching the profession throughout the state to follow up their business relationships with patients in business-like manner, a real and further service would be rendered the profession.

When we have had the funds to spare in Los Angeles, our Council has never hesitated to spend such money for material benefits which our members could enjoy and, while such activities rarely had the sanction of all members, there could be no doubt but that real progress was made and that the Society became a stronger county unit through the adoption of the same.

In line with this thought, we have only to remember how big a factor has been *our State Society malpractice defense* in building up the membership of our state organization. It may, in fact, be said to have been the one special and tremendously large factor in securing the membership of many who have joined our state unit in recent years. Any who doubt this need only review the history of our State Society of years ago, when, although it had a state name as to geographical scope, it was almost as distinctively a district organization, as was and is the Southern California Medical Society.

The question here arises as to whether our State Society might not profit through the *formation of district organizations,* say one in Southern California, one for the bay cities, one for the Sacramento Valley and one for the San Joaquin. If states of small geographical area find such organizations of value, why should not we of much larger geographical domain? Only here also constant co-operation and nursing through state officials would be necessary to attain the highest usefulness for such district associations, which would meet once every year or so, at cities within their respective geographical districts.

Before closing this paper and without in any way desiring to trench on the domain of the two special committees appointed by me at your order, to report on these two subjects, your president would say a few words in regard to the present Industrial Accident and State Compensation law and the proposed Social Insurance law.

Our *Industrial Accident and State Compensation Act is here,* and here to stay. When our Society took up this matter several years ago, and agreed to a minimum fee table lower than the average, the basic thought insisted upon, was that this work should remain open to all members; in other words, that any attempt at commercializing it, as for instance, through a few members contracting for all the work of a company, and then directly or indirectly, farming this work out at less than the fee table rates to other colleagues, should be frowned upon and forbidden. This issue has since arisen and should be met by a clear statement from our State Society, so that county units may the more easily take the proper local action. With a clearly outlined State Society policy, the local societies can take proper action with a minimum of ill feeling and animosities between members who do and who do not live up to the rule.

As this paper is being written, the daily press contains a notation of the rejection by the Senate by a vote of 21 to 11, of the resolution which would have called for a popular vote on the constitutional amendment or enabling act which would permit our state to institute *Social Insurance.* If this action stand, then the immediate danger in this matter is postponed for the next two years at least. Since writing the above the Senate has reversed its action and voted that an enabling act be submitted to the people and the chances are good that the Assembly and Governor will also endorse it.

Of course, in one sense we are all of us in favor of the end object of social insurance, namely the protection in the fullest measure of the health and lives of our fellow citizens of limited income. Certainly our profession, of all groups, can be least accused of being indifferent to the needs of our lay fellows in humble environments, because it has been the medical men who have at all times, and in a large measure, often gratuitously, responded to the needs of these lay fellows, when ill or injured.

To extend aid to those who need it, without question of individual compensation, and simply as a matter of mercy, is, however, one thing, and, no matter how gladly we have and are still willing to do this, the proposition is a very different one when a plan is proposed and exploited by a small number of persons in the state, whereby more than 50 per cent. of the population (probably 60 per cent. or so) of this rich and rather free from poverty-conditions commonwealth would be taken from the domain of private practice to become part of what might be called a large insurance or lodge clientele.

In so radical a change as that which is proposed, there can be little doubt but that our profession would be made to suffer in both its material and professional relationships. Without going into this subject further, which will be considered at greater length by your special committee, permit me to emphasize with that committee that if there is at this time, any one particular problem that is vitally concerned with organized medicine in California, it is this proposed law with which we are now face to face.

The thought we would further impress upon you is this: that the best time to preserve the present system is at two stages; one, while the proposed enabling act is being considered in the Legislature, where we have to deal with only a very few men, whom it ought to be possible to educate to properly consider the professional and material positions of the medical profession in this matter; or two, when the proposed enabling act, once it be passed by our Legislature, and which would require a two-thirds popular vote to become a law, goes before the people of the state, and where again, because of the lesser number of political units whom we would have to deal with, and so on, we might likewise have a better chance of success.

Let us not delude ourselves in this matter. Social insurance as proposed will probably wreak havoc and disaster for many members of our profession and relegate many of our members either out of practice or place them on a decidedly lesser professional, social and material scale. If two-thirds of the state's population would be involved in this law, probably two-thirds or more of the doctors would also be involved.

Further, let us remember again that it behooves us in this, as well as certain other public health problems in which we are interested, to build up a different system of political activity and action, whereby we may successfully (just as do our lay fellow citizens in business and all other walks of life), the better protect those fundamental rights

and interests in which we are interested. In other words, that we really build up as part and parcel of organized medicine a plan of procedure in political matters which will adequately and successfully protect those legitimate rights, which we, as members of a learned profession, doing no end of altruistic service for our lay fellows, have a right to expect to see properly protected.

To do this is neither debauchery or treason of our own code of ethics or principles, but is just plain every-day common sense, and is a much wiser course of procedure than presenting the spectacle of letting the ill be done and then all of us running about much after the fashion of chickens which have had their heads cut off.

So that as part and parcel of this talk on organized medicine, we make a plea for a far more active and practical activity than we have been manifesting in the last several years, believing first that we are fully justified in so acting; and second, holding that our fellow members who elect certain of us to office as councilors and so on to act for them, have a just right to expect us to use that judgment and action, which it is understood we possess, when we consent to permit our names to be considered as officers in our medical societies.

In conclusion, permit me to state that I appreciate that this address may be somewhat unsatisfactory from the scientific standpoint, but that I, nevertheless, feel that you may well give a half or one hour or so of serious consideration to some of these problems which are so intimately connected with your daily lives and your future careers, and which problems, if not adequately considered, may make your professional careers much less pleasant for you. Of course, a goodly number of members of our society who are firmly entrenched in professional life, with large numbers of well-to-do clients, can go on their way without bothering about these matters. But there is a much larger number of lesser paid colleagues, both old and young in years, who may be vitally involved in these matters, and it is for the interests of these colleagues that we would especially plead.

My plea is then for a more earnest recognition of the many problems which face our organization, and for a call for members who will try to solve them in such earnest and successful fashion that while we are so engaged, the purely scientific, the social and the professional phases of our work shall each in their proper spheres, go on to highest and fullest realization. And this I am firmly convinced can be all brought to pass, if we only go about our work, in right fashion.

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MINUTES OF THE HOUSE OF DELEGATES FORTY-SIXTH ANNUAL SESSION OF THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA CORONADO, APRIL 17th.

First Session.

Roll Call:

The roll being called, sixty (60) Delegates were found to be present, and the president, Geo. H. Kress in the chair, declared that there was a quorum of Delegates and that the House was ready for businesss.

Report of President:

The report of the president was made verbally, and merely referred to his annual address which had already been read. He then appointed the following members to act as a Committee on New Business and Reports: W. R. Molony, Los Angeles; Geo. G. Reinle, Oakland; Gale G. Moseley, Redlands.

The Chairman of the Council, Dr. Kenyon, then read a report from the Council, which was referred to the Committee on New Business.

In explanation of certain phases of Medical Defense, the General Attorney, Mr. Hartley F. Peart, was called upon. He made a verbal report, a resume of which was ordered by the President to be referred to the above committee, and later to appear in the Journal.

Report of Auditing Committee:

Was read by H. A. L. Ryfkogel, with an explanation and elucidation of our financial status, including certain recommendations as to increase of State dues. This was referred to the Committee on New Business.

Treasurer's Report:

Being the Union Trust Company, San Francisco, no report. $13,052.52 in bank.

Report of the Publication Committee:

A report from the Publication Committee was read by René Bine. Referred to the same committee.

Report of Secretary:

Temporary Secretary made a verbal report as to membership, office work—being summary of a written report. Referred to Committee on New Business.

Special Committees:

C. P. Thomas read a report on Industrial Accident Insurance. This report was referred to the Committee on New Business.

Advertising Committee:

R. E. Bering made a verbal report as a Committee on Advertising and pleaded for greater co-operation on the part of members in giving patronage and assistance in this matter.

Publication Committee:

René Bine read a report on the Publication Committee which was referred to the Committee on New Business.

New Business:

The following resolution was read by J. H. Graves concerning Industrial Accident Insurance. It was moved by H. Bert Ellis, seconded by A. B. Grosse, that no action be taken in this matter until it had been referred to the Committee on New Business. Voted and carried.

Graves' Resolution No. 1.

Whereas, There is pending before the State Legislature an act to enable further study of the Health Insurance problem with a view to providing for the State of California a compulsory Health Insurance for wage workers; and

Whereas, The successful operation of Health Insurance laws, where in force in other parts of the world has not been a marked success in accomplishing that for which they were intended; and

Whereas, The State of California has so recently

embarked upon the enactment of Social Insurance laws in the shape of Industrial Accident Insurance, which it has not yet had sufficient opportunity to learn the efficacy and even the full use thereof (witness the pending act before the Legislature which changes some features and readjusts the whole working of that law); be it

Resolved, By the Medical Society of the State of California, that such Health Insurance will quite possibly one day become highly desirable, and that for the present it is best to withhold legislation until such time as experience has proved the worth of Social Insurance as we now have it, and the social affairs of our country have become again normal.

A Supplementary Report and discussion of State Compensation Bill No. 818 was made by Geo. F. Tucker, followed by a discussion by F. F. Gundrum and Ferdinand Stabel.

The meeting was adjourned to 8 o'clock p. m. Wednesday.

Second Session.

CORONADO, April 18th, 8 p. m., 1917.

The meeting was called to order with Geo. H. Kress in the chair.

Roll Call:

Upon calling the roll there were eighty-seven (87) Delegates present.

Election of Officers:

President:

J. Henry Barbat, San Francisco, was nominated by O. D. Hamlin, seconded by A. B. Grosse. There being no other nominees, on motion, duly seconded, the nominations were closed, and Secretary instructed to cast the ballot. J. Henry Barbat was duly elected.

There was no contest in the election of any of the following officers, and in each case the motion prevailed unanimously. The nominations were closed and the Secretary ordered to cast the ballot, with the exception of the election of the Secretary, in which case the President cast the ballot:

First Vice-President:
W. W. Richardson, Los Angeles.
Second Vice-President:
Morton R. Gibbons, San Francisco.
Secretary:
Saxton Pope, San Francisco.
Councillors:
Fifth District: P. T. Phillips, Santa Cruz.
Seventh District: E. N. Ewer, Oakland.
Ninth District: A. W. Hoisholt, Napa.
At Large: René Bine, San Francisco.
Three New Councillors at Large:
Geo. H. Kress, Los Angeles.
Jno. C. Yates, San Diego.
Gayle G. Moseley, Redlands.
Committee on Scientific Program:
Walter V. Brem, Los Angeles.
Committee on Public Policy:
W. R. Molony, Los Angeles.
Walter B. Coffey, San Francisco.
Committee on Arrangements:
Three to be appointed by the Council.
Committee on Public Health:
Geo. E. Ebright, San Francisco.
J. L. Pomeroy, Monrovia.
W. W. Roblee, Riverside.
W. H. Irwin, Oakland.
A. B. Cooke, Los Angeles.
Delegates to the A. M. A.:
A. B. Spalding, San Francisco.
H. P. Newman, San Diego.
Alternates to the A. M. A.:
Edward Clarence Moore, Los Angeles.
H. A. L. Ryfkogel, San Francisco.
Mary R. Butin, Madera.
A. H. Byars, San Diego.

REPORT OF THE CHAIRMAN OF THE COUNCIL.

Mr. President and Honorable Members of the House of Delegates:

Gentlemen:

The Medical Society year, of which this meeting is the closing epoch, has been one of unusual events. The loss of the Secretary and Editor, and two members of the legal staff, and the extra work involved in forming and adopting the necessary rules and regulations for the Defense and Indemnity funds, called for an unusual amount of work. Hence the number of meetings of the Council has exceeded that of any previous year.

The Council was established and began its work with all the functions of this great body undeveloped. We had the invaluable aid of our late Secretary in working out the various units: the Register, the Journal, the Information Bureau, the Defense Fund and the Indemnity Fund.

Having experienced the distinction of being chairman of the Council since the beginning—enjoyed the successes and fretted over temporary defeats and obstacles—I can at this time call your attention to the present status of our organization with a degree of pleasure.

The functions above mentioned are the fruits of the work of the Council.

The Official Register speaks for itself, and has been most valuable to the membership.

The Journal is also before you. It is a credit to this Society. The California State Journal of Medicine compares favorably with the best state journals. Here we must render tribute to our late Editor and Secretary, who was two years in the lead of the Journal of the American Medical Association in the fight against impure drugs, and quack exploitation of the same, as proprietary and patent cure-alls.

The Information Bureau: The files of this unit afford ready reference to the standing of members of this organization and of other medical men throughout the State.

The Defense Fund: The fourth unit in the list of functions handled by the Council has taken more time and required more attention than any other. Our Mr. Peart, chief of the Legal Department, has assisted the Council in establishing rules and regulations much more comprehensive than those at our command heretofore.

The Indemnity Fund: Available to the members that have contributed $15.00 per annum for two years, completes the units. This provides insurance at lower rates than are offered by any insurance company. This fund is to be placed in the hands of a Board of Trustees, elected by the Council. When this is better understood by the membership, it is hoped it may grow to a much larger sum. Our Mr. Peart suggests $50,000 or higher. He is present, and your Council would be pleased to have him allowed an opportunity to address the House of Delegates, more fully explaining the benefits of this fund, the rules adopted to safeguard it, and its management by the Board of Trustees.

The books have been examined and certified as correct.

A new improved system of bookkeeping has been established.

The funds on hand April 1, 1917, $13,052.00. Of this amount $5610.00 belongs to the Indemnity Fund. Actual amount $7442.00.

At the last meeting of the Medical Society of the State of California, Dr. Sherman, in his presidential address, made certain suggestions that are of the utmost value to the future of the organization.

These in brief were that the Medical Society of the State of California should undertake the standardization and certification of the physicians of the State. And secondly, that the State So-

ciety should take up propaganda which would bring it closer to the layman.

Our Society has been second to none in its efforts to develop the best in medicine and it has been singularly successful with its plans to give the maximum practical benefits to its members. But this is not sufficient.

In order to make the Society mean the more to its members we must make it a matter of common knowledge among the laity that our State Society is constantly developing the kind of medicine that means the most for the future health of the public. We must also be able to say that no man whose morals and training do not conform to the ideals of the Society can join its ranks.

In order to put into practical action these idealistic conceptions of Dr. Sherman the Council makes the following suggestions:

That the present application blank used by County Societies be changed so as to indicate more definitely the qualifications for membership and the necessary standards and that the Council be instructed to prepare such blanks and furnish same to component Societies.

The Council further recommends that every member of the Society place on his stationery the designation "Member Medical Society, State of California."

For the purpose of rendering more effective the work of the Committee on "Public Policy and Legislation" and of co-ordinating the effective strength of the component Societies in all things relative to State medicine, an assistant to the Secretary be provided. Such person shall under his direction procure, prepare and keep on file all data germane to this subject so that same shall be readily accessible at all times, and shall, through the Secretary, furnish to any member of the Society such information as he may require in connection with State, county and municipal governments and organizations, public or private in relation to the medical profession.

In order to defray the increased expenses of the Society due to their wider activities it has been deemed necessary by the Council to increase the State Society dues to $7 beginning with the year 1918.

(Signed) C. G. KENYON,
Chairman Council.

REPORT OF COMMITTEE ON COMPULSORY HEALTH INSURANCE.*

Mr. President and Fellow Members:

Compulsory Health Insurance is being opposed by the medical profession, by organized labor and by employers. This naturally leads one to ask: "Who is for it?" "Why all this agitation if nobody wants it?" The answer is: "Some of the profession, some labor groups and some employers really favor it, and in their study they are being assisted by some of the ablest students of sociology in the country, men interested in labor legislation from any standpoint, with an earnest desire that it be good legislation." It might, therefore, be of interest to summarize the arguments advanced for and against the health insurance bills that have been proposed in this country.

A. Compulsory Health Insurance Urged Because:

1. It will greatly reduce the cost of sickness.
2. It will be a certain means of preventing a large amount of sickness.
3. It will make the burden on each individual patient lighter.
4. It will make those responsible for sickness pay for it.
5. It will make for increased industrial efficiency.
6. It will provide cash benefits during illness, which at present is the most important factor in the causation of poverty.
7. It will do systematically and intelligently what is done by the old methods irregularly and to a considerable degree blindly, with much duplication of effort and much waste of money.
8. It is the greatest social need, now that compensation for industrial accidents is established.
9. Voluntary insurance has embraced but a comparatively small part of the wage working population.
10. The health of the individual is a matter of public concern as a matter of national efficiency, and because of possible menace to others.
11. Illness being a cause of unemployment, there will be less unemployment.
12. It will raise the physical stamina of workmen, thus increasing productivity and earning power.

B. Compulsory Health Insurance Opposed Because:

1. It is merely palliative.
2. It is not a conservative measure in that saving would result.
3. It merely provides for an extension of the present modes of lodge and contract work.
4. It cannot remove or prevent poverty.
5. It will encourage the tendency to malinger.
6. It can not be enforced without the aid of police power, therefore cumbersome and expensive.
7. It does not provide for those who need it most, casual workers and the unemployed.
8. It will provide opportunity for a big political organization.
9. Its medical cost is problematical; its administrative cost, if up to average political standards, probably not economical.
10. It cannot be managed by incompetent and unintelligent politicians.
11. It would destroy the spirit of independence.
12. It would establish socialism, paternalism, create class distinction.
13. It would probably exclude all but so-called "regular" practitioners of medicine.
14. It would interfere with religious liberty, because it would force medical examination of, and compel medical treatment of Christian Scientists.
15. An individual has the right to be sick as much as he pleases, or to take as much patent medicines as he chooses to stuff into himself.
16. It permanently excludes derelicts and to some extent the dependents of derelicts, who so long as they exist must be objects of charity, preferably of private charity, the latter having a favorable influence upon the character of the rich.
17. The rich need health insurance as well as the poor.
18. The majority of employees are already insured in fraternal or other associations.
19. It is no more essential to the welfare of the community than would be compulsory insurance devised to provide food, clothing and housing.
20. It does not have any real effect upon unemployment.
21. It is needless as our health conditions are satisfactory.
22. It would discourage thrift.

C. Compulsory Health Insurance Favored by Labor Because:

1. Wage workers appreciate the advantages of insurance methods as demonstrated by the numerous types of insurance institutions which they have organized or in which they participate.
2. Fraternals, benefit societies, factory societies, trade unions, render services often inadequate in amount, deficient in quality.
3. It will secure for the sick wage earner and his family honest and competent medical service, as well as support for himself until able to resume his work.
4. It will give employers a powerful impetus toward better sanitation, shorter hours and greater consideration for their employees, if for no other reason than for their own self-protection.

* Read at the Forty-sixth Annual Meeting of the Medical Society of the State of California, San Diego, April 1917.

5. It is better to use insurance funds than to depend upon charity.

6. There are many benefits that inevitably accrue to the insured under a system of co-operative health insurance.

7. It knows that in 1908 labor leaders prophesied revolution before British workmen would consent to compulsory insurance. In 1910 they were all lauding Lloyd-George to the skies for forcing the passage of the bill.

D. Compulsory Health Insurance Opposed by Labor Because:

1. It is an innovation, one to be feared.

2. Experience with the Workmen's Compensation law has not been up to expectations.

3. The laborer can at present obtain medical services for almost nothing at dispensaries, hospitals, from poor lodge or hospital association doctors.

4. It would perpetuate classes.

5. It would interfere with fights for higher wages.

6. It would mean an invasion of homes, an interference with home life by inspectors, all repulsive to democratic instincts.

7. If the government once embarked on the principle of meddling in the purely personal affairs of wage workers, there is no limit to meddling and possible slavery.

8. If industry is to bear the cost, it would lead to examination of employees with rejection of those not up to physical or age standards.

9. It is un-American, it deprives men of the right of freedom, of liberty, of personal action.

10. The only way to help the workman is to provide a minimum wage, shorter hours, sanitary living and working conditions.

11. There is no guarantee that there will not be insurance carriers, run for their own profit, and not for the real benefit of the insured.

12. There is already plenty of voluntary insurance.

13. Compulsory insurance is based upon the theory that wage earners are unable to look after their own interests.

14. The term **compulsory** is particularly obnoxious, because it applies only to labor. If health insurance were to be universal, well and good.

15. Labor leaders did not formulate the bill in question; it prefers to solve its own problems by itself.

16. The American Federation of Labor is opposed to it; the organized labor movement is the only agency that gets at the causes of poverty.

17. It only provides the means for tiding over an emergency; it is not constructive.

18. There is no guarantee of economic freedom, e. g., participation in benefits must not depend upon continuous employment in a certain industry, etc.

19. Labor wants better standards of life and work, higher wages, shorter workdays, better homes, more safe and sanitary conditions in places of employment.

E. Compulsory Health Insurance Favored by Doctors Because:

1. Some form of state medicine is inevitable, and in the near future.

2. It will take away the practice of medicine from commercialism.

3. It will favor the return to idealism in medicine, of ethics.

4. It will expose the weakness of cults (C. S., chirop.) fakers and fads.

5. It will give real medical service.

6. It will avoid delayed medical treatment.

7. It will furnish opportunity for detection of incipient disease.

8. It will tend to equalize the financial burdens thrown upon the medical profession by the immense proportion of unpaid, gratuitous, unremunerative, charitable work done by the profession. It is not desirable that the profession continue to make such large contributions from its constantly diminishing resources.

9. It will do away with all the unfair practices and horrible abuses that have crept into the practice of medicine, e. g., abuse of hospital and dispensary charity, the cornering of hospitals by a few physicians, lodge evil, contract practice, secret fee splitting, taking of commissions from manufacturers of certain appliances (trusses, belts, limbs), chemical and X-ray laboratories.

10. It will furnish means for the first serious attempt in this State to combat tuberculosis, in the detection of early and isolation of advanced cases, in the prolonged treatment of hopeful and in the decreased suffering of hopeless cases.

11. Instead of sick employees feeling compelled whenever illness comes to them, to resort to patent medicines or run to dispensaries, they will get good care, and thus do away with quackery and patent medicines and with the abuse of free dispensaries by people who are willing and ought to pay reasonable fees.

12. They believe that the gross incomes of the profession would not only not be reduced, but perhaps increased.

13. They feel that reforms in the present methods of practice are essential; that group medicine has a definite place.

14. They know that free medical and hospital care, without other aid, only partially relieves the distress attending illness of a wageworker.

F. Compulsory Health Insurance Opposed by Doctors Because:

1. Physicians are characteristically conservative. Their education and experience lead them to carefully consider any matter proposed on purely theoretical grounds.

2. Workmen's Compensation laws have not worked out as anticipated by, nor to the satisfaction of the medical profession.

3. It might permit a small percentage of the doctors to control most of the industrial practice, with great extension of lodge and contract work.

4. It is feared that opportunities to make large incomes will be lost.

5. It is feared that salarying a physician destroys his initiative and removes the incentive for original effort.

6. It will lead to an immediate, though temporary dislocation of the profession.

7. It will put a large number of doctors at the mercy of ever-changing groups of politicians.

8. It omits casual workers and also those unable to pay the assessments, on account of previous illness, general incompetency, shiftlessness, alcoholism, etc., and these will be left as before to the tender charity of the general practitioner.

9. It provides for an extension of the present forms of lodge and contract practice, so unsatisfactory to physician and patient.

10. Services will be inadequately remunerated.

11. Doctors will be often unnecessarily overworked.

12. There is no real provision for preventive medicine.

13. It will destroy the personal relations that have always existed between physician and patient.

14. It will reduce the doctor to the level of the average underpaid, dissatisfied wage earner.

15. Health Insurance has been but a very small factor in the reduction of the mortality rate in the countries where it is in force.

16. There is no evidence and nobody claims that the sick poor are neglected by the profession.

17. It is not the cost of medical service but the cost of the necessities of life that keep the wage worker poor.

18. The medical profession demands the right

to formulate for itself its terms of practice, and that only after proper study.

19. The medical profession is not opposed to a health insurance scheme providing **cash** benefits to sick wage earners; it prefers to make its own arrangements with the sick in regard to choice of doctor, fees, etc.

When three years ago, the accident phase of social insurance became a law of California, the profession suddenly realized that without even being consulted, its practice of surgery was being radically altered. It has been voicing its objections ever since then with results well known to all of you by their absence.

It was to prevent a similar occurrence that this committee was created. And for this reason, this committee has not heeded the cry of some who urge that the only way to defeat such legislation is to fight it from the start, instead of assuming that it is sure to come, as claimed by its ardent advocates.

During the past year your committee has been actively engaged in a study of health insurance. It has urged county units to form local study groups. It has, from time to time, contributed or incited articles appearing in your Journal in the hope that long before any measure has been placed on the statute books, it will have aroused much thought and discussion on this, the most important subject which has ever come before our Society.

It is not alone the profession of our State that is interested in health insurance. Bills have been introduced in 12 States. Health insurance is a national question, and Congress has devoted time to its discussion. The Journal A. M. A. has published a number of most excellent papers on this question, and the report of the Special Committee of the A. M. A., of which Alexander Lambert is chairman, has been, we hope, read, studied and digested by all of you.

In California it will be necessary to pass on a constitutional amendment before any health insurance bill can be introduced in the Legislature. In this respect we are better off than the profession in other States, who from the start have had definite bills to consider, to endorse or to fight.

We now quote from the report of the Social Insurance Commission of the State of California:

"In the spring of 1915, insistent problems of dependency and destitution were called to the attention of the California Legislature. It was pointed out that destitution was a growing social disease, that public relief was at best an undemocratic palliative, that demands for assistance were increasing at such an alarming rate as to become an intolerable burden upon public funds.

"The need of coping with this disease of destitution in a way calculated to prevent its future inception and growth was reiterated by social workers and they testified to the beneficial effects of the Workmen's Compensation Act, which insured the wage earner against the disastrous results of industrial injuries. They pointed out that workmen's compensation was but a part of a comprehensive protective system worked out in European countries, under which system, if the worker fell ill, he was entitled to medical attention and a substantial part of his wages; if he became an invalid or reached old age, he was entitled to a pension for the rest of his life; if he was out of employment, he was maintained until a job was available, while if he died leaving dependents, these dependents were given a pension. This protective system, to wit: social insurance, was designed to prevent and relieve destitution. It involved the establishment or assistance by the government of insurance of working men against the loss of earning capacity from any or all causes. The cost of this insurance was met partly by the working men, partly by their employers and partly by the State.

"In view of the fact that one phase of social insurance had been so successfully transplanted to this country and was being effectively and efficiently administered by the Industrial Accident Commission of this State, the possibilities of benefit from other branches of social insurance suggested itself to persons interested in social progress. Accordingly, a bill creating an unsalaried commission to investigate the whole problem was introduced in the Legislature and was passed by that body as Chapter 275 of the Statutes of 1915. It became a law by the signature of the Governor on May 17th and went into effect the following August."

The constitutional amendment proposed by the California Commission follows:

"It is hereby declared to be the policy of the State of California to make special provision for the health and welfare of those classes of persons, and their dependents, whose incomes, in the determination of the Legislature, are not sufficient to meet the hazards of sickness. The Legislature may establish a health insurance system, applicable to any or all such persons, and for the financial support of such system may provide for contributions, either voluntary or compulsory, from such persons, from employers, and from the State by appropriations.

"The Legislature may confer upon any commission or court, now or hereafter created, such power and authority as the Legislature may deem requisite to carry out the provisions of this section."

Health insurance, voluntary or compulsory, is now in force in all but two important European countries, and the United States is the only great industrial nation which has not, thus far, adopted a comprehensive scheme of health insurance.

The principle of insurance is known to you all. It aims at distributing a burden over a long period upon a large number of persons so that any given calamity is not felt by the individual. Health insurance is not so new a subject as some would have us believe. It is new only in so far as forms advocated. Witness the various fraternal orders, trade unions, factory societies, benefit funds, hospital and benevolent associations. These organizations must surely represent a demand arising from classes appreciating the necessity for and able to afford this form of health insurance. Nobody has ever accused them of having been created by a few Socialist, fanatical agitators. In addition to the above, note the increased popularity of free clinics and commercial hospital associations.

Health insurance administration as it exists at present in our State, really includes our State and city health boards and their laboratories, our State and county hospitals, and our city physicians. We furthermore have quarantine, vaccination, child-labor and eight-hour day laws, all of them really compulsory health measures.

Although the wiping out of all social evils has never been promised by even the most ardent advocates of insurance, the latter nevertheless has a distinct place in our economic life. Insurance does not prevent. Life insurance per se does not prevent death. Fire insurance does not prevent fire. Accident insurance does not abolish accidents. But life insurance companies are now trying to educate policy holders, and hope to prolong life. Fire insurance companies investigate fire conditions and standardize methods for fire protection and make rates accordingly. Workmen's compensation laws have diminished accidents. Health insurance, properly administered, cannot fail to reduce the prevalence of illness to a lower level. It cannot be expected to abolish all illness.

There is no denying that there are many people in this State, whose ability to go to work each day is the only factor keeping them above the poverty line, or as expressed by a labor man "the great majority of wage earners each day earn

daily bread; the opportunity to work stands between them and want on tomorrow." They are absolutely unable to bear the extra financial burdens imposed by illness. The ever increasing attendance of otherwise self-supporting wage earners at our free clinics furnishes eloquent testimony to this fact. There are, in addition, many more who should be receiving medical care, but who are too poor to employ private physicians, and too proud to apply either to them or to clinics for free services.

We require no statistics to convince us of the truth of these statements. We have all had the same experience, and know how often our profession is called upon to donate its services. Before workmen's compensation laws became effective, casualty companies and lawyers reaped an annual harvest of millions from the industrial classes, whose damaged bodies the medical men repaired generally for nothing. If it be true that the medical profession itself needs reforming, or reorganizing, let all remember that practically every effort along these lines has been initiated by the profession itself and that every attempt made to raise standards is opposed by legislators as tending to create a medical trust.

As citizens and as physicians, interested in the welfare of this commonwealth, we are heartily in favor of any measure that conduces to the benefit of the people. We are therefore heartily in favor of the principle of health insurance as a means of providing against the direct and the indirect cost of illness.

We endorse a principle, we recognize the existence of health insurance measures and organizations; and often because unregulated we have seen the latter flourish at the expense of our profession.

We must remember, however, that after all, there is a great need for further information as to the detailed workings of compulsory health insurance in other countries. The German plan led to innumerable medical strikes, and the best interests of a community are not served by a dissatisfied underpaid medical profession. The English plan is too recent, and the course of the war of such influence upon it, to enable us to draw conclusions as to the direct effect of health insurance upon the British medical profession, upon the quality of service rendered, and thus indirectly upon the people served.

With the entrance of our country into the war, we believe ourselves justified in expecting the following results: (a) Many of the labor group will enlist. (b) Industry will be maintained at present levels or speeded up where possible. (c) There will be little if any unemployment. (d) For the time being, women, too, will obtain employment in greater numbers. (e) The labor class will be financially better able to cope with illness. (f) The city, State or national governments will singly or jointly, provide for dependents of enlisted men. (g) Many of our profession will be called upon to sacrifice remunerative civil work for military medical duty. (h) The present scope of activities of the local and State health boards will be greatly enlarged along the lines of preventive work. In other words, we are entering upon a new era; new institutions are in the making and old ones taking on a new life. Let us be alive and do our share. But let us make no mistakes. Let us organize—let us know what we want. Let us be sure that proposed laws will not only really be of benefit to those they are designed to help but that they will do no injury to others.

Further than this, the proponents of health insurance have not, as yet, presented any plan of medical organization that your committee can endorse. Even the Social Insurance Commission of the State of California is convinced that the form of organization contemplated by the well known bill of the American Association for Labor Legislation will inevitably give rise to difficulties, and it therefore suggests the separation of cash and medical benefits, the insured to pay the entire cost of the former either through an approved fraternal organization, union, voluntary society, or State fund, whereas the administration of the medical benefits and the organization of the medical aid will be in the hands of a State commission, supported by the contributions of employers and the State. This commission would, in a measure, be comparable to the present Industrial Accident Commission.

The experience of the profession in this State has been such as to render it suspicious of any commissions of this type. We need not go into details. The State fund has not justified the confidence reposed in it by the profession.

It is mainly because of this objection that your committee reprints, without comment, the following paragraphs from the report of the committee of the San Francisco County Medical Society, in the hope that it will furnish a basis for discussion in your further study of this question:

"The proposed plans guarantee two types of benefit to the insured in the event of illness. First, a cash benefit amounting to a certain proportion of his previous income; and second, medical care, which includes the services of a physician or of physicians, drugs, mechanical appliances and, if need be, hospital care. Your committee is unable to suggest any method whereby insurance carriers can furnish medical care without serious objections on the part of many physicians. In the first place, it is not certain that the total sum received by the profession under the proposed change would equal that which it now receives from the same classes of patients. Even though we assume for the sake of argument that the total sum will equal or will even exceed what is now received, it will be distributed differently, for the new distribution will be more or less controlled by the State and by the insurance carriers. The transition to this new set of conditions would undoubtedly work a hardship to many in the profession. It may be argued that under State control the selection of physicians would be more just than under the system of absolutely free choice now in force. This might be true under ideal conditions of governmental control; but the experiences of the past, particularly with respect to medical licensure, anti-vivisection laws, and industrial accident insurance, does not inspire the profession with confidence in the State control of medicine. Should at some time this control fall into the hands of those out of sympathy with the profession or should it be used for the promotion of political purposes, then a large part of the profession would find itself at the mercy of an unjust or corrupt central control. And in the end such a condition could not fail to lower the standard of medical service rendered to the community as a whole.

"Your committee therefore feels that from the standpoint of the medical profession it can endorse compulsory health insurance only in so far as it provides a cash benefit for the insured in the event of illness. If medical care were not provided this cash benefit could be greater than it would be otherwise. Under such a plan the patient would receive a cash benefit but the relations between patients and their physicians would remain as they now are. The committee realizes that this plan will not satisfy many who are at present advocating compulsory health insurance, for the reason that under this plan the sick benefit would often be insufficient to meet the expenses of illness. Nevertheless, the committee believes that the medical profession would prefer to follow its present custom of minimal charges in such cases rather than risk the uncertainties of State control together with an alteration in the personal relation that now exists between physician and patient."

If the enabling amendment proposed by the Social Insurance Commission of the State of Cali-

fornia goes through the Legislature (at this writing it has passed the Senate with every likelihood of receiving a majority in the Assembly), the people will have to decide for themselves as to whether they wish to endorse the principle of health insurance. If they do, we shall be asked to give our services to that class of individuals coming under the act, our organization, fees, etc., to be fixed by law.

If, as we are told, health insurance must come, there are certain fundamental principles which, we think, should be impressed upon the minds of every person thinking or talking health insurance.

The cost should be borne partly by the employer, if there be one, partly by the employee, and partly by the State. This is the best way to interest employers in the health of their workers, and to enlist their aid in prevention of disease, for we know that the industry is often responsible for some of the sickness of its employees. The health of employees or their families may be affected by home surroundings, habits, or by the unavoidable incidents of life.

The cost of sickness is not going to be wiped out by health insurance. Its burden is simply going to be shifted. If a man is paid money benefits while ill, for work he not doing, there is a money loss to someone just the same. But if the worker who ordinarily would have no care, and whose illness would become a serious one, by proper and early care is sick but a short time, there is a money gain to someone, somewhere. And if it is found that to pay physicians and surgeons fees commensurate with their services is going to make the scheme an expensive one, beyond the means of the three parties who will be asked to contribute thereto, then either the State must learn that lives cannot be measured by dollars and cents, or it should not engage in health insurance. It is almost pathetic to think that in times of war we are willing to vote for billions for our defense against a foreign enemy, billions for materials which are made but to be destroyed, and yet when at peace, we hesitate to vote a few paltry millions for defense against an enemy ever present in our midst—sickness.

The cost is, therefore, to our mind, no reason, no excuse for low medical fees. There are many of us who have complained of the methods of the insurance companies doing industrial accident work. We felt that the State fund was in a class by itself. But, lo and behold! as a result, it is claimed, of its competition with companies run for profit, it too has resorted to methods most objectionable to the profession.

The majority of the profession, and of this committee, feel that the profession should therefore object to any bill for health insurance if it does not provide for the exclusion from the field of private companies run for profit. A minority of this committee feel that with a State fund only to deal with, we would be exposed to all the evils attending political control, with its enforced recognition of cults, sects, fads and fakes.

Health insurance should not be limited to the man who has a job. Provision should be made to furnish medical care to the unemployed, the shiftless and the pauper. The county now provides for the latter. The State could undertake this and medical men should be paid for service to the indigent as well as to the employed.

But even while considering health insurance, let us see to it that the State give its unqualified support to the State Board of Health in its preventive work. Let us see to it that our housing and factory conditions measure up to the standards imposed by law. And let us try and educate the public to demand only the best medical service, and to appreciate the fact that the best medical service cannot be obtained cheaply, simply by act of the Legislature.

Your committee hopes that the Legislature will grant further life to the Social Insurance Commission, with an adequate appropriation to carry on a more intensive study of these matters. Your committee, in concluding, would state that under present conditions, and at least until the war is over, and until more data on the subject are available, this Society should strenuously oppose all Health Insurance bills. This committee makes no recommendation as to the action this Society should take on the Enabling Amendment, if it be submitted to the people of the State, preferring to leave this matter to be discussed by your House of Delegates.

Respectfully submitted,

(Signed) RENÉ BINE,
Chairman.

REPORT OF COMMITTEE ON INDUSTRIAL ACCIDENT INSURANCE.

To the Medical Society of the State of California:

Your committee after a year's consideration and several meetings, beg to report as follows:

The three points which this committee was asked to consider, were the subject of possible increase in fee schedule, free choice of physicians by the injured and the ethics involved in Industrial Accident Work.

Since your committee has been investigating the fee schedule adopted tentatively by the State Society, in 1914, and the administration of the same by the State Compensation Insurance Fund, and the private casualty companies, it has reached the conclusion that the schedule itself is not so much at fault as its improper application and understanding on the part of the profession.

At the close of the session of last year, we were reminded by the Medical Director of the Commission, that the suggested fee schedule, was in fact, a minimum schedule, and that under all circumstances, special services and cases requiring special skill, would be paid for in proportion to the difficulties encountered.

While many of the insurance companies have endeavored to hold us to their interpretations of this fee schedule, we have had at all times, recourse to two sources for adjustment of fee controversies; first, the Committee on Grievances of the California State Medical Society.

This committee has met irregularly, depending on the volume of business presented. It meets with certain members of the Adjusters' Association in San Francisco, and it has found no difficulty when the standpoint of the physician is explained, in securing an agreement by the adjusters.

This committee is the logical solution of many of these difficulties.

The second recourse is to the Industrial Accident Commission through its Medical Director.

The Industrial Accident Commission is committed to the fee schedule as published, and is in fact the final court in all matters pertaining to the fees for industrial accident work. The commission stands at all times willing to advise on fees before bills are submitted, and to adjust difficulties arising between insurance companies and the doctors regarding bills.

The Medical Director of the Commission invites correspondence, so that misunderstandings may not arise.

Many doctors have allowed themselves to be misguided by the representatives of insurance companies and they have oftentimes accepted fees grudgingly which were inadequate and actually did not correspond with the fee schedule.

The second point for consideration is the matter of free choice of physicians. Attention of the Society is invited to the fact that there is pending before the present Legislature an act which provides as follows:

"The employer shall provide for his injured

employee such medical, surgical and hospital treatment as may be required to cure or relieve the results of injury, provided (and here appears the new part of the law) that if the employee so requests, the employer shall tender him one change of physicians and shall nominate at least three additional practicing physicians competent to treat the particular case, or as many as may be available, if three cannot reasonably be named from whom the employee may choose; the employee shall also be entitled in a serious case, upon request, to the services of a consulting physician to be provided by the employer; all of said treatment to be at the expense of the employer. If the employee so requests, the employer must procure certification by the Commission or a commissioner, of the competency for the peculiar case for the consulting or additional physicians."

We feel that the information conveyed in this extract of the law is sufficient comment on this portion of our duties.

Under the caption of ethics we will discuss both the question of ethics of the profession and of the insurance companies.

There is a deep-rooted antagonism among medical men toward contract work.

The industrial accident law has tempted many men to secure work under contract, and even to exploit members of their profession.

It is the universal opinion of your committee that any form of contract practice, including contract practice for industrial accident work, is unethical and contrary to the best interests of the profession.

Contract work comes in several guises, either as an offer on the part of an insurance company or an insurance company's doctor to swing all or a definite portion of medical work in a locality to a physician in return for certain per cent. of his legitimate earnings, or that form of contract in which the insurance companies give a percentage of their premiums to the physician for services.

Your committee recommends that this body take definite action in opposition to such forms of contract and take means to discipline members allowing themselves to encourage any such practices.

A resolution will be presented to this effect at the first session of the House of Delegates.

The members of the medical profession have frequently complained of the attitude assumed by insurance companies and treatment of its members by insurance companies,—while it is recognized that the ethics of the insurance companies may not conform to those of the medical profession, it is nevertheless our opinion that there is a reasonable and just course which they may pursue,—any deviation from such a course by an insurance company should be published to the Society members and to the Industrial Accident Commission. Condemnation of such overt acts is recommended. This will also be covered by resolution.

Report of the Committee on New Business:

The following report having been taken up section by section, discussed and voted upon, it was moved by G. G. Reinle that the entire report be adopted as a whole; seconded by A. B. Grosse, voted and carried.

The following resolution was read by O. D. Hamlin, seconded by Bine:

Resolved, That the House of Delegates respectfully begs leave to submit to the authorities of the American Medical Association in case they desire to consider a Pacific Coast member to take the place on the Board of Trustees made vacant through the death of Philip Mills Jones, the name of H. Bert Ellis of Los Angeles as a member, whose long service would make his name worthy of serious consideration. Also,

Resolved, That the A. M. A. Delegates be instructed to nominate, work for and elect Ellis to office.

Moved by Fitch C. E. Mattison, seconded by A. B. Grosse; voted, carried.

The following amendment was presented by the Chairman of the Committee on Scientific Work, Robert Peers:

Amendment to Art. VI, Sec. 2 of By-Laws: "Committee on Scientific Work shall consist of the Secretary of this Society, ex-officio, the Secretaries of the Scientific sections ex-officio and four additional members shall be elected, one each year, to serve four years, and shall determine the character and scope of the scientific proceedings of the Society of each session, subject to the instruction of the House of Scientific Medicine."

The following proposed amendment to the By-Laws was presented by P. T. Phillips, Chairman of the Committee on Public Health and Hygiene:

Art. VI of By-Laws (a new section, 7th). Same as Sec. 3 except labeled Committee on Public Health and Hygiene: "The Committee on Public Health and Hygiene shall consist of six members, two to retire each year, and the President and Secretary. Under the direction of the House of Delegates, it shall represent the Society in securing and enforcing legislation, in the interest of Public Health and Scientific Medicine."

It was duly moved and seconded that these amendments be laid on the table until next year. Voted and carried.

Resolutions Sustaining the President read by René Bine, seconded by W. R. Molony, were unanimously adopted.

Whereas, On April 6th, 1917, pursuant to resolution of Congress, President Wilson proclaimed the existence of a state of war between the United States of America and the Imperial German Government, and called upon all citizens to manifest their loyalty; be it

Resolved, That the Medical Society of the State of California sustain the President, with every resource at its command. The Medical Society pledges its help and co-operation to the Government; be it further

Resolved, That a copy of this resolution be forthwith transmitted to the Honorable Woodrow Wilson, President of the United States of America, and the Surgeon General of the United States Army and Navy, and to the Governor of the State of California.

Vote of Thanks.

It was moved by H. Bert Ellis that a vote of thanks be extended to San Diego for its hospitality. A standing vote of thanks—carried.

The following resolution was presented by Kress:

Jones Resolution.

Whereas, Death has taken from our midst not only one of our most loyal and best known members, but that particular one of us, of whom it may be justly stated, that to his plans, his efforts and his work more than that of the others of us, the sound reorganization of this Medical Society of the State of California was especially due; and

Whereas, The days go by, we are learning to appreciate more and more the invaluable services which he rendered in behalf of ourselves, our State Medical Society and the Public Health of California; now, therefore, be it

Resolved, By the Medical Society of the State of California

That in the death of Dr. Philip Mills Jones, the Medical Society of the State of California has suffered an irreparable loss; and be it further

Resolved, That these resolutions be printed with the proceedings of this 46th Annual Meeting, and that a copy thereof be sent to the Journal of the A. M. A. and his bereaved family.

It was moved by A. B. Grosse, seconded by H.

Bert Ellis, that the resolution be adopted by a standing vote.

Dr. J. Henry Barbat, the incoming President, was then introduced by the chairman and made a short verbal address.

It was regularly moved and seconded that the House of Delegates adjourn to meet at Del Monte, April 16, 1918.

REPORT OF THE COMMITTEE ON NEW BUSINESS.

Your committee on new business begs leave to report the following for the consideration of the

House of Delegates:

1. Referring to the President's and to the Council's report, we concur in the general recommendations, and recommend the following action as regards individual items:

(a) That the House of Delegates request the Council to make a survey and to either institute such district societies as might be deemed desirable, or to report further on this matter at the next meeting of the House of Delegates.

(b) That the House of Delegates request the Council to make a survey on redistricting the Councilor Districts and to report thereon at the next annual meeting, with submission of proper amendments, in case such should be deemed necessary. And in connection with this, that the Council, through its executive officer, several times a year urge every Councilor to at least visit every county society in his district once or twice a year.

(c) That the House of Delegates heartily endorse the recommendation of both the President and the Council that a systematic and comprehensive plan of public health propaganda be inaugurated and persistently carried on in as many portions of the State as possible.

(d) That the House of Delegates heartily endorse the plan of the proposed legislative bureau, and urges the Council to not only institute such a department of our executive work, but that the Council keep in intimate touch with the various activities and methods of procedure in this bureau, where diplomacy and clear thought and action are of such vital interests to our profession and our society, and that, as was recommended, this new bureau keep the county units likewise in most intimate touch with this much-needed work.

(e) That this House of Delegates urge the Council, through its executive officers, to acquire a more intimate knowledge of the mode of organization of every county unit, and that measures be instituted to carry on, one or more times each year, throughout the State, an active campaign for new members in every county unit of our society. In this connection, also, that the House of Delegates recommend to the Council the consideration of the plan of application blanks, being in two sets, both of the same printed forms, the loose sheets being sent out from time to time to county members for distribution among eligible friends, who are non-members. And that in addition the State Society give to every county unit bound sets of those blanks in duplicate, the detachable portion being sent to the State Society, and the bound-in portion remaining in possession of the county unit; permanent records in this manner being much more possible, especially for our smaller county units.

(f) That as regards county societies' bulletins, that the larger county units, as an expression of courtesy and of co-operation, be urged to place every county medical unit of California on its bulletin mailing list.

(g) That the House of Delegates recommend to the Council, that the Council inform every standing and special State Society committee, that the Council will appoint one Council member to act in an advisory capacity on behalf of the Council, in the sessions of each committee, and that all standing and official committees be informed that such Council representative is to be invited to the different committee meetings.

(h) That it is the sense of the House of Delegates that the annual meetings be held either at the Hotel Del Monte or the Hotel Potter, unless there be good reason for holding the meetings elsewhere.

(i) That the House of Delegates endorse the plan of a year book containing a list of members, rules of scientific program and general information, to replace the annual directory which has been discontinued.

(j) That the House of Delegates ask the editor and the publication committee of the "Journal" to seriously work over the provision already existing for county society correspondents, with the view of using their correspondence, making the "Journal" pages of more value and interest to its different readers.

(k) That the House of Delegates express its appreciation of the action of the Council and of the attorney of the Society, for the excellent and able plan of procedure which is being worked out by means of which it seems possible that our malpractice defense work shall be more efficiently handled, as in the very best private companies doing this work.

(l) That the House of Delegates heartily endorse the safeguard provided by the Council

for the administration of the newly instituted indemnity fund, and urge the trustees of this fund and the Council to ever continue the safeguards. Further, that the Council be requested to carry on a propaganda whereby more of the members of our Society throughout the State may avail themselves of this indemnity protection.

(m) That the House of Delegates place the State Society assessment on county units for the year 1918 at $7 per member.

(n) That the amendments recommended by the Council be adopted, to-wit:

1. Amend the by-laws, Article V, Section 1, thereof, by striking out the word "Editor" in line 9 of said Section 1, and inserting in lieu thereof the word "Secretary."
2. Amend the by-laws, Article V, Section 3 thereof, by striking out the word "Editor" in line 8 of said section, and inserting in lieu thereof the word "Secretary."
3. Amend the by-laws, Article VIII, Section 5, by inserting in line 2 of said section, after the word "Members," the following:

"In accordance with the method hereinafter provided, amend Article VIII, Section 5, by adding thereto, in the last line of said section, the following: "'Every applicant for membership in a component society must fill out in duplicate and sign the application blank provided by the Secretary prescribing the necessary qualifications for membership.'"

2. As regards the report of the Committee on Industrial Accident Insurance, we recommend as follows:

(a) That the House of Delegates go on record as still accepting the fee schedule, as a minimum for average cases, which was submitted at the Santa Barbara meeting three years ago through the representatives of the Industrial Accident Commission, provided that the understanding entered into at that time be strictly adhered to.

(b) That the members of our State Society be reminded that where the amount of fee involves a difference of opinion, that the members avail of the services of our Grievance Committee, appointed for such purpose, of which committee Dr. Morton Gibbons of San Francisco is chairman, or where the carrier is a private insurance company, that the members can if they so desire take the matter up direct with the Industrial Accident Commission.

(c) That the members of the Society, through the "Journal," be made familiar with the exact provisions of the law, in relation to choice of physicians.

(d) That the House of Delegates adopt as part of the regulations on ethics of the Society, each of the following submitted resolutions, to-wit:

Whereas, Certain members of this society have contracted with other physicians at fees less than the Industrial Accident fee schedule, and to retain for their personal profit the difference between sums received and paid out for services, and

Whereas, Such a system is contrary to the code of ethics of the medical profession and is productive of poor surgery and poor surgical results, be it

Resolved, That it is the sense of this meeting of the House of Delegates of the State Medical Society of California that such contract practice is hostile to the interests of scientific medicine, and the proper spirit which should prevail among medical men, and is discountenanced, and that County Society be requested to promptly discipline all such members.

Resolution No. 2.

Whereas, Certain members of this Society have seen fit to solicit Industrial Accident work from employers and insurance companies at rates below Fee Schedule, believing that thereby their offer is more acceptable and their own business is increased, be it

Resolved, That these acts are unethical and contrary to the best interests of the whole profession, and that the County Society be requested to promptly discipline all such members.

Resolution No. 3.

Whereas, Certain members and groups of physicians have contracted with insurance companies to furnish all medical and surgical care for an agreed per cent. of the premium income of the insurance company, in an effort to increase their own income at the expense of the whole profession, and

Whereas, This practice is in danger of leading to the most obnoxious form of contract practice, to which this society is opposed, and that the County Society be requested to promptly discipline all such members.

Resolution No. 4.

Whereas, Certain insurance companies have employed physicians on a salary basis to care for as much of their surgical work as possible at a price inadequate to cover reasonable fees for labor performed, and

Whereas, It was the distinct understanding between the Industrial Accident Commission, the State Fund and the Adjusters' Association and the Medical Society of the State of California that such practice would not be abdopted, be it

Resolved, That the Industrial Accident Commission, the State Compensation Fund and the Adjusters' Association be reminded of this agreement and requested to desist from this practice and that such members, participating in such a contract, be disciplined by their County Society, and that the names of the insurance companies which are parties to such a contract be made known to the members of this Society by its officers.

(e) That the House of Delegates continue the present Special Committee on Industrial Accident Insurance, and that committee be requested to make, during the coming year, a careful survey of the present minimum fee schedule, and that as part of the committee's report to the next annual

meeting, it bring a detailed schedule concerning the matter of minimum fees.

3. That as regards the report of the Special Committee on Social Insurance, we recommend as follows:

(a) That the House of Delegates concur in the conclusions of the Special Committee, that the legal institution of the proposed plan of compulsory health insurance by the State of California does not seem to be advisable at this time, and that our Council be instructed to at once take steps to see to it that our viewpoint in this matter be made as politically effective as possible.

(b) That the present Special Committee on Social Health Insurance be continued, and be requested to further study this problem, and to make a report thereon at our next annual meeting.

(c) That the House of Delegates adopt, in addition, the resolution introduced, to-wit:

Whereas, There is pending before the State Legislature an Act to enable further study of the health insurance problem, with a view to providing for the State of California a compulsory health insurance for wage workers, and

Whereas, The operation of health insurance laws in force in other parts of the world has not been a marked success in accomplishing that for which they were intended, and

Whereas, The State of California has so recently embarked upon the enactment of social insurance laws in the shape of industrial accident insurance, the officiency and full use of which has not yet had sufficient opportunity to learn (witness the pending Act before the Legislature, which changes some features and readjusts the whole working of that law), be it

Resolved, By the Medical Society of the State of California, that although such health insurance may quite possibly become highly desirable at some future day, for the present it is best to withhold legislation until such time as experience has proven the worth of social insurance as we now have it, and until political and economic affairs of our country have again become normal.

4. In connection with the report of the Secretary, in which we concur, we suggest that the House of Delegates at this time, on behalf of the Society, express its deep appreciation of the services rendered during the last year by Drs. C. G. Kenyon and Saxton Pope.

5. That the House of Delegates recommends that steps be taken to properly acquaint the members of the Society with the report of the Committee on Public Policy and Legislation.

6. That the House of Delegates adopt the report of the Committee on Scientific Program, to-wit:

Your committee begs to report scientific program:

1. That all publicity of this committee is carried on through our "Journal," with the exception of a letter sent to the deans of the various medical schools of the State requesting co-operation on the program. All applications for space on the program were recorded as to time of arrival and places assigned in rotation. This method definitely precludes favoritism, which in the past has been frequently though unjustly complained of.

2. We have ruled that all accepted applicants for places on the program must furnish a satisfactory abstract on or before January 1st. This rule has been rigidly enforced by the general committee and should be made obligatory in future on all sections.

3. We have also ruled that any reader of a paper who does not appear at the meeting and cannot furnish an excuse satisfactory to the committee shall be deprived of the privilege of the program for three years.

4. Our President, George H. Kress, urged that we have stenographers for all scientific meetings. This plan had to be dropped on account of lack of funds, by order of the Council. We recommend that at all future meetings stenographers be employed, and inasmuch as members in the past did not stick strictly to the subject matter of their remarks when correcting their copy, and thereby rendering the published proceedings valueless, we advise that the committee appoint a member for each session, to be responsible for the discussions at each session, to read back the notes with the stenographer, and then send out the notes to the members for correction, but not permitting the discussion to be changed. This method was tried and found satisfactory by the Urological Section some years ago.

We request that if possible the House of Delegates will adopt this report and make this method of procedure obligatory on the Scientific Program Committee.

Respectfully submitted,

(Signed)

Harry E. Alderson,
R. A. Peers,
Fitch C. E. Mattison,
Alfred B. Grosse (Chairman),
Committee on Scientific Program.

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7. Report of the Committee on Publication.

We recommend:

(a) That the House of Delegates adopt the report of the Committee on Publication, to-wit:

Gentlemen: Your committee really published its report in your April "Journal," page 98, but as some of you may not have read it, it presents the following statement:

The "Journal" has now sixty-one papers which have been accepted and set up in type. Of these, twenty-two were read at the State Society meeting in April, 1916, and thirty-nine before county and other societies. Up to the present time it has been mandatory that the "Journal" publish all papers read at the State meetings, and customary to publish all papers read at county society meetings. This has caused such an overwhelming influx of material that the printer was compelled to ask us to have no more stuff set up, as his supply of type is almost exhausted, and, at the

present price of metal, he is unable to secure more without an unwarranted outlay of capital.

It is easily seen that if we publish four or five papers in each issue, the sixty-one papers will require a full year to print. Recognizing this condition, the Council has given the Publication Committee the right to reject any papers hereafter submitted, including those read at the meetings of the Society. No paper is ever rejected until it has been carefully considered by at least two, and usually by all, members of the committee. No paper is given preference in any way whatsoever, except in the case of those dealing with material that cannot be delayed. Every paper that is set up in type costs the "Journal" several dollars for the labor, so that if a paper is withdrawn and the "metal killed," the cost of set-up is a total loss, and we have no surplus.

The Council, at the request of your committee, has authorized a temporary increase in size of the "Journal," so that the stagnation may be relieved. Sixteen extra pages will be added, until we catch up with our material.

Respectfully submitted,
Publication Committee, By R. B.

(b) That the House of Delegates express its thanks to the members for their loyal and efficient service to our "Journal" and society.

(c) That the House of Delegates likewise express its deep appreciation of the Advertising Committee for their valuable co-operation.

8. That the House of Delegates recommends that as regards national preparedness, in relation to the medical profession:

(a) That the President of the Society be requested to appoint, upon behalf of our Society, the present State Committees on Red Cross and National Service, to act also on behalf of the Medical Society of the State of California, and

(b) That the officers of our Society be requested to make as accurate a survey as is possible of the extent to which the members of our Society, in case of national emergency, would be able to professionally co-operate.

9. That the House of Delegates extend a vote of appreciation to Mr. Hartley F. Peart and Mr. H. T. Morrow for their splendid spirit of co-operation with the Society, and for the excellent and thorough conduct of the work entrusted to them.

10. That the Medical Society of the State of California, through its House of Delegates, endorse the Prendergast Bill, which is designed to promote scientific medical research in this State, to the end that human life may be conserved.

11. That the House of Delegates express, at this time, its recognition of the many years of loyal and self-sacrificing service rendered by our beloved late Secretary, Dr. Philip Mills Jones, to whom so very much of the present efficiency and standing of the Medical Society of the State of California is undoubtedly due.

Respectfully submitted,
W. R. Molony,
Geo. G. Reinle,
Gail G. Moseley.

The following amendment was presented by the chairman of the Committee on Scientific Work, Robert Peers:

Amendment to Article VI, Section 2, of the by-laws:

Committee on Scientific Work shall consist of the Secretary of this Society, ex-officio, the Secretaries of the scientific sections, ex-officio, and four additional members, shall be elected, one each year, to serve four years, and shall determine the character and scope of the scientific proceedings of the Society of each session, subject to the instruction of the House of Scientific Medicine.

The following proposed amendment to the by-laws was presented by P. T. Phillips, chairman of the Committee on Public Health and Hygiene:

Article VI of by-laws (a new Section 7), same as Section 3, except labeled Committee on Public Health and Hygiene:

The Committee on Public Health and Hygiene shall consist of six members, two to retire each year and the President and Secretary. Under the direction of the House of Delegates it shall represent the Society in securing and enforcing legislation, in the interest of public health and scientific medicine.

It was duly moved and seconded that these amendments be laid on the table until next year.

Voted and carried.

REPORT OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION OF THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA.

Your committee on Public Policy and Legislation desires to submit the following report:

As usual, a large number of Bills were introduced in both the Senate and the Assembly during the present session of the State Legislature which directly, or indirectly, affected the welfare and the interests of the medical profession.

The chiropractors' lobby was present in full force and had a number of measures introduced in both Senate and Assembly, which would relieve them from compliance with the provisions of the Medical Practice Act and permit them to control the licensing of members of their own cult.

Senate Bill No. 24, introduced by Senator Scott of San Francisco, a companion Bill of Assembly Bill No. 57, introduced by Assemblyman Hilton, has undergone a rather stormy consideration in committee and on the floor of the Senate. The Bill was passed out of Committee on Public Health and Quarantine, with recommendation "Do not pass." Was voted upon in the Senate last week, but was not passed, and by motion for reconsideration was not brought to vote, the proponents of the Bill realizing that sufficient votes could not be mustered to insure the passage of the measure.

I believe other measures which came before the Committee on Public Health and Quarantine would undoubtedly be of interest to the members of this Society.

Senate Bill No. 105, introduced by Senator Ballard, was introduced at the request of the Chiropractors, providing for a separate Drugless Board, was withdrawn from committee and the author of the Bill gave notice that he would lend

his support to Senate Bill No. 24, introduced by Senator Scott.

Senate Bill 279, introduced by Senator Inman of Sacramento, at the request of another member of the Chiropractic lobby, was laid upon the table by committee. It was a companion Bill to Assembly Bill No. 95, introduced by Assemblyman Argabrite.

Senate Bill 760, introduced by Senator Stuckenbruck, amends Section 13 of the Medical Practice Act. Its purpose was to eliminate the oral practical clinical examination of applicants from other States holding certificates prior to 1901. Assemblyman Harris introduced a companion Bill in Assembly Bill No. 1155. This measure was not brought before the Senate.

Senate Bill 104, introduced by Senator Crowley, at the request of the San Francisco County Board of Health, which was a regulative measure referring to the practice of midwifery, was laid upon the table in committee.

Senate Bill 110, introduced by Senator Luce, combined Medical Dental and other licensing Boards; provided, further, for the creation of a Board of three laymen, was laid upon the table in committee.

Senate Bill 1010, introduced by Senator Luce, providing that all physicians holding official positions and getting a salary under State statute, should be prohibited from engaging in private practice, was not urged by its author for passage, and probably will die in committee.

Assembly Bill 1375, introduced by Assemblyman Gebhart, which provided for amendment to the present Medical Practice Act, introduced at the request of the State Board of Medical Examiners, passed the Assembly committee with recommendation "Do pass." Passed the Assembly without opposition; reported out of Committee on Public Health and Quarantine without opposition, with recommendation "Do pass." It was passed in the Senate on vote of thirty to four, and is now in the hands of the Governor for approval.

There are a number of Bills which were introduced in both branches of the Legislature bearing on the subject of public health, which were supported by the State Board of Health, and I have listed in this report, but need not bring to the attention of the Society at this time. The published report of this committee will include reference to these Bills.

The chairman of your committee has been present at the Legislature during practically all of the sessions following the constitutional recess.

Assembly Bill No. 798, introduced by Assemblyman Prendergast, known as the Vivisection Bill, the provisions of which I assume are familiar to all the members of the Society, passed the Assembly after a bitter fight and is at the present time in committee in the Senate. The Defense Council, appointed by Governor Stephens, has gone on record as approving the passage of this Bill, and the sentiment of the Senate is such as to warrant us in believing that the measure will pass that body, and after approval by the Governor, will become a law.

Assembly Bill 141, providing for the inspection and licensing of swimming pools, passed both houses and has been signed by the Governor.

Assembly Bill 238, amendment to Political Code relative to health officers and boards of health, passed both houses and is now before the Governor.

Assembly Bill 239, amending sections of the Political Code relative to health officers and boards of health, has passed both houses and is now before the Governor.

Assembly Bill 240, amending public health act relative to the duties of health officers. This bill has met great opposition from the lobby of the Parents' Rights League of San Francisco, owing to the fact that it recognizes the existence of disease carriers. This bill passed the Assembly on March 13, but is still being held up in the Public Health Committee of the Senate. It is very important that this bill should pass, as it simplifies the State public health organization.

Assembly Bill 510, repealing section of the Penal Code forbidding the maintenance of pest houses in cities, passed both houses and has been signed by the Governor.

Assembly Bill 741, amending the registration of vital statistics act; before the Assembly, being delayed by the attack of a faction among the undertakers, who wish to lower the standards relative to the registration of deaths.

Assembly Bill 742, amending the Political Code relative to the Bureau of Vital Statistics; passed both houses and is now before the Governor.

Assembly Bill 743, amendment of the Political Code, relative to the Bureau of Vital Statistics; in Ways and Means Committee.

Assembly Bill 762, amending cold storage act; passed both houses.

Assembly Bill 763, amending foods act; in Ways and Means Committee.

Assembly Bill 764, amending Drugs Act; passed both houses.

Assembly Bill 765, commercial feeding stuffs act; in Senate Public Health and Quarantine Committee; passed in the Assembly.

Assembly Bill 766, false advertising of foods and drugs; discussed in committee on Public Health and Quarantine, withdrawn, as subject already provided for in the law.

Assembly Bill 826, providing for shellfish supervision; passed both houses and has been signed by the Governor.

Assembly Bills 897 and 898, to establish a psychopathic hospital; have been withdrawn.

Assembly Bill 1123, milk bill strengthening the present law; on third reading file in the Assembly.

Assembly Bill 91, prohibiting common drinking cups; passed both houses and is now before the Governor.

Senate Bill 92, prohibiting common towels; passed the Senate, now before the Assembly.

Senate Bill 99, amendments to Nurses Registration Act; passed both houses and signed by the Governor.

Senate Bill 104, licensing of midwives, State Board of Health substitute and also original Bill dropped. (Bill of Board of Medical Examiners passed both houses).

Senate Bill 163, providing for joint tuberculosis hospitals; passed both houses and now before the Governor.

Senate Bill 173, authorizing counties to employ public health visitors; this Bill was reported out by the Senate Committee on County Government with the recommendation "Do not pass" and was later withdrawn.

Senate Bill 404, repealing act for reporting of occupational diseases; passed both houses.

Senate Bill 405, inspection of venereal disease hospitals; passed Senate; favorable recommendation of Assembly Committee P. H. and G.

Senate Bill 558, amending sanitary water systems act; passed by Senate; in Assembly Committee on P. H. and Q.

Senate Bill 559, amending Public Health Act relative to sewage disposal; passed Senate Committee on P. H. and Q.; favorable recommendation of Assembly Committee.

Senate Bill 608, amendment to Contagious Dis-

case Act relative to squirrel control; passed both houses.

Senate Bills 444, 445 and 446, relative to orphans' aid to children of tuberculosis parents; withdrawn.

Senate Bill 932, amendment to Tuberculosis Act; in Committee on Finance.

Senate Bill 1028, registration of ingredients of patent medicines; withdrawn.

Assembly Bill 824, providing for local health districts; still in committee.

Respectfully submitted,

George E. Tucker, Chairman.

DELEGATES AND ALTERNATES REGISTERED AT THE FORTY-SIXTH ANNUAL MEETING OF THE MEDICAL SOCIETY, STATE OF CALIFORNIA, CORONADO, CAL., APRIL 17, 18, 19, 1917.

Abbott, W. S.; Adams, L. P.; Addis, Thos.; Alderson, H. E.

Baer, Adolph; Bancroft, J. R.; Barbat, J. H.; Barkan, Hans; Black, S. P.; Blake, Wm. F.; Boardman, W. W.; Brown, P. K.; Bullock, N. H.; Butin, Mary; Brinkerhoff, E. E.; Brown, J. M.; Burger, Thos. O.; Byars, A. H.

Carpenter, F. B.; Clark, T. J.; Clark, W. A.; Cohn, A.; Cooke, A. B.; Cox, T. J.; Coffey, T. J.

Dameron, J. D.; Day, R. V.; Dakin, W. B.; Dillingham, F. S.; Dryer, J. L.; Doig, R. L.

Ellis, H. B.; Eloesser, Leo; Enloe, N. T.

French, J. Rollin; French, J. R.; Fisher, J. T.

Gibbons, H. W.; Gundry, F. J.; Gundrum, F. F.; Gunn, Herbert; Grosse, A. B.; Graves, John H.

Hamlin, F. A.; Hamlin, O. D.; Hill, R. B.; Hoisholt, A. W.; Huggins, W. L.; Hunt, R. H.

Irwin, W. H.

Jablons, B.; Jacobs, Edw. H.; Jordan, P. A.

Kahn, M. G.; Kahn, Maurice; Kelly, A. S.; Kelsey, A. L.; Kenyon, C. G.; Kiger, W. H.; King, J. C.; Kress, G. H.; Kuser, J. H.

Lewis, Will J.; Lewis, W. M.; Lissner, H. H.; Lockwood, C. D.; Loos, H. Clifford.

Martin, J. L. R.; Meads, A. M.; McArthur, W. T.; McArthur, P. R.; McCoy, T. J.; McKellar, J. H.; Molony, W. R.; Moore, Ross; Moseley, G. G.; McNaught, H. Y.; Mattison, F. C. E.; Molony, Martin; Montgomery, C. H.

Newman, H. P.

Osborne, D. E.

Pauson, C. A.; Parkinson, J. H.; Peers, R. A.; Peek, Allen; Phillips, P. T.; Pierson, P. H.; Pottenger, F. M.; Pollock, Robt.; Powell, Alvin; Powell, B. J.

Reardan, F. B.; Reiss, Oscar; Reinle, Geo. G.; Richardson, W. W.; Rixford, Emmet; Rice; Rogers, Thos. L.; Roblee, W. W.; Robertson, H. M.; Rosenkranz, H. A.

Sanford, Paul; Scholl, A. J.; Shoemaker, Harlan; Simmons, S. E.; Smith, S. F.; Smythe, Hudson; Soiland, Albert; Spalding, A. B.; Speik, F. A.; Stabel, F.; Stillman, Stanley; Strietmann, W. H.; Sweet, Robt.

Taubles, Geo. H.; Thomas, C. P.; Tourtillott, W. W.; Tucker, Geo. E.

Van Zwalenburg, C.; Van Kaathoven, J. J. A.; Vecki, V. G.; Von Adelung, E.

Walker, J. R.; Walsh, F. D.; Welty, C. F.; Watkins, J. T.; Wilson, J. M.; Witherbee, O. O.; Wicherski, O. G.

PERSONNEL OF THE HOUSE OF DELEGATES.

President, George H. Kress.

Councillors—Chairman, C. G. Kenyon; T. C. Edwards, E. N. Ewer, A. W. Hoisholt, A. C. A. Jayet, E. C. Moore, G. H. Aiken, I. H. Parkinson, René Bine, H. A. L. Ryfkogel, O. D. Hamlin, C. Van Zwalenburg.

MEMBERS AND GUESTS REGISTERED AT THE FORTY-SIXTH ANNUAL MEETING OF THE STATE SOCIETY, CORONADO, APRIL 17, 18, 19, 1917.

Abbott, W. S.; Adams, B. O.; Allen, C. L.; Alvarez, W. C.; Ainley, F. C.; Andrews, H. F.; Anton, Francis L.; Armstrong, J. M.; Armstrong, V. C.; Ash, Rachael L.; Avery, John L.

Baer, A.; Baker, Fred; Ball, J. D.; Banks, A. E.; Barkan, Hans; Barnhart, Wm.; Baumbaugh, Bertha P.; Beattie, W. A.; Bering, R. E.; Bine, René; Birtch, F. W.; Bishop, T. W.; Black, Emil; Black, S. P.; Blake, W. F.; Boggess, Ira S. (U. S. P. H. S.); Bowman, W. B.; Boyd, W. T.; Boyes, E. J.; Breed, L. M.; Brem, W. V.; Briggs, W. E.; Brinckerhoff, E. E.; Brown, J. M.; Brown, P. K.; Brownfield, W. H.; Browning, C. C.; Buckman, R. W.; Buggren, N. J. (guest); Burger, Thos. O.; Burke, E. W.; Burnham, F. R.; Burton, F. A.; Butin, Mary R.; Butt, E. G.; Byars, A. H.

Campbell, R. R.; Campbell, W. H.; Campiche, Paul; Carter, J. J.; Cartmell, T. M.; Cameron, Howard; Carter, R. S.; Carrington, P. M.; Chaffin, R. C.; Charlton, A. T.; Chopins, Mr. and Mrs. (guest); Church, B. F.; Churchill, Jas. F.; Clarke, Louise H.; Clark, Thos. J.; Clark, U. G.; Clark, W. S.; Cleary, E. W.; Clemmons, E. J.; Cleverdon, Ernest; Coburn, E. S.; Coffey, Titian; Cohen, Albert; Cohen, Mrs. Albert (guest); Coller, F. A.; Colliver, John A.; Compton, G. W.; Conzelmann, F. J.; Coulter, H. M.; Courntnay, Gordon; Cowan, J. F.; Crabtree, E. H.; Crabtree, H. T.; Craig, W. H.; Crawford, W. W.; Curtiss, W. H.; Cumming, Jas. G. and wife; Cunningham, R. L.; Curtiss, Chas. L.

D'Ancona, A. A.; Dakin, W. B.; Day, Robt. V.; Davis, B. C.; Detling, F. E.; Derbyshire, A. L. D.; De Ville, Leon; Dickson, E. C.; Dillingham, F. S.; Dingeman, F. J.; Doig, Robt. L.; Donnell, R. H.; Dudley, W. H.; Duncan, Rex; Dwight, Wilder; Dwire, F. B.; Dryer, J. L.

Early, C. E.; Edwards, Carrie; Edwards, T. C.; Edwards, Wm. A.; Eloesser, Leo; Erkenbeck, Jas. W.; Evans, Geo. H.; Evans, Newton; Ewer, E. N.

Fairchild, F. D.; Falconer, E. H.; Farmer, L. Etta; Ferbert, J. C.; Fisher, Arthur L.; Fisher, J. T.; Fleischner, E. C.; Fly, E. M.; Fly, R. L.; Foster, R. de L.; Fox, R. M.; Franklin, B. V.; Fredrick, M. W.; French, J. R.; Fuller, G. E.

Gallup, H. A.; Gaynor, Katherine K.; Gibbons, M. R.; Gilchrist, C.; Gillispie, S. T.; Glaser, E. F. and wife; Goff, H. N.; Goodyear, J. J.; Graham, H. B.; Grant, J. F.; Graham, Robertson; Green, L. D.; Griffin, C. F.; Grosse, Alfred B.; Gundrum, F. F.; Gundry, F. J.

Hagadorn, John; Hanlon, E. W.; Harding, M. C.; Harris, Eva L.; Harrower, H. H.; Harvey, R. W. and wife; Hastreiter, R. F.; Henry, W. O.; Hensel, E. A.; Herlihy, J. S.; Herzer, F.; Hill, Robt. B.; Hileman, J. E.; Hilliard, C. G.; Hinman, C. J.; Hinman, Frank; Hoag, C. L.; Hoffman, R. O.; Holmes, Will H.; Hoisholt, A. W.; Hosmer, C. M.; Holsclaw, F. M.; Holsti, Oster; Howson, C. R.; Huggins, W. L.; Hund, H. O.; Hunkin, S. J.; Hunter, George G.; Hurwitz S. H.

Inman, T. G. and wife; Irwin, W. H.

Jablons, Benj.; Jackson J.; Jackson, Josephine A.; Jacobs, E. H. and wife; Jacobs, L. C.; Jennison, J. E.; Jewett, R. A.; Jones, A. H.; Jordon, P. A.; Johnson, Walter S.

Kahn, M.; Kalb, Geo. B.; Kelly, E. E.; Kelly, L. E. (guest); Kelsey, A. L.; Kendall, O. L.; Kiger, W. H.; Kilgore, E. S. Mrs. (guest); Kinney, L. C.; Kinney, Mila J.; Klotz, W. C.; Knapp,

E. V.; Kneedler, F. E.: Knox, C. R.; Koons, H. H.; Krotoszyner, M.

Larson, J. L. M.; Larzalere, J. V.; La Motte, L. A. J.; Leisenring, C. G.; Lepper, L. E.; Lewis, Wm.; Lischner, H.; Lissner, H. H.; Little, T. C.; Livingston, W. R.; Lobininger, A. S.; Lochert, L. W.; Long, A. D.; Lowman, C. L.; Loos, H. C.; Lorini, R.; Lord, J. P. (guest); Lucas, F. B.; Lucas, W. T.; Lund, George J.; Lynn, Charles.

McArthur, P. R.; McArthur, W. T.; McIntosh, A. M.; MacGowan, Granville; Mackenzie, W. W.; Mackerras, R. H.; Macleish, Arthur; Macpherson, J. F.; Magee, Thos. L.; Mallery, J. H.; Mann, E. C.; Manwaring, W. H.; Marsh, O. G.; Martindale, J. A.; McClaskey, Grace (guest); McGinnis, G. H.; McKellar, J. H.; McNaught, H. Y.; Mead, F. H.; Meads, A. M.; Merriam, F. E.; Miller, Austin; Miller, Chas. H.; Miller, R. W.; Mills, Lloyd H.; Molony, M.; Molitor, N.; Molony, W. R.; Morton, A. W.; Mortensen, W. S.; Montgomery, C. H.; Moore, J. A.; Moore, E. C.; Moore, H. S.; Moore, J. Ross; Moore, T. M.; Murphy, W. W.; Myers, Mark, C.; Myers, T. C.

Neel, J. C.; Nelson, Chas. F.; Newman, A. H.; Newman, H. P. and wife; Newman, W. H.; Nielsen, J. C. E.

Oatman, H. C.; Olds, W. H.; O'Neal, Robt.; O'Neill, B. J.; Orbison, T. J.; Osborne, D. E.; Owen, Carl.

Parks, J. A.; Parrett, O. S. and wife; Palmer, Caroline B.; Parker, P. J.; Parker, T. A.; Parkinson, Jas. H.; Pauson, C. A.; Peters, Lulu H.; Peers, Robt. A.; Phillips, C. E.; Pickard, J. E.; Pickard, R. J.; Pierson, P. H.; Pietrefesa, R.; Pischel, K. and wife; Podstata, V. H.; Pope, Saxton; Powell, Alvin; Power, H. D'Arcy; Putman, H. A.

Rand, C. W.; Ream, W. R.; Reardon, F. B.; Reed, W. A.; Rees, C. E.; Reiss, Oscar; Reinle, Geo. G.; Roblee, W. W.; Richardson, W. W.; Rigdon, R. L.; Rogers, Francis L.; Rogers, Thomas L.; Rooney, H. M.; Ruddock, J. C.; Ryan, L. M.; Ryan, L. R.; Ryfkogel, H. A. L.

Sandall, L. B.; Sanderson, A. J.; Savage, W. W.; Schaller, Walter F.; Scholl, A. J.; Scholl, Agnes J.; Scott, A. J., Jr.; Seabolt, G. C.; Seiffert, John H.; Sewall, E. C.; Shaffer, C. P. (guest); Shaul, J. W.; Sherk, H. H.; Sherman, H. G. (guest); Sherman, H. M.; Sill, E. R.; Simmons, S. E.; Skeel, D. W.; Simonds, P. E.; Slabaugh, W. H.; Sleeper, Karl R.; Smart, Robt.; Smith, John J.; Southard, W. H.; Spalding, A. B.; Speicher, A. F.; Spiro, H.; Stadtmuller, E. S.; Steade, J. M.; Stevens, Wm. E.; Stillman, Stanley; Stivers, C. G.; Stoddard, C. L.; Stoddard, T. A.; Stone, Bertram; Stork, Victor; Strietmann, Wm. H.; Sullivan, J. F.; Swearingen, A. W.; Swearingen, F. C.; Sweet, Robt. B.

Taltavall, Wm. A.; Taubles, Geo. H.; Taylor-Goodman, C. W.; Tebbetts, H. B.; Thayer, J. W.; Thomas, R. W.; Thomason, Geo.; Thompson, D. E. H.; Thompson, H. A.; Tucker, Geo. E. and wife; Tupper, R. B.; Tholen, E. F.

Vallee, J. E. (guest); Van Kaathoven, J. I. A.; Van Magern, D. B. (guest); Van Nuys, R. G. and wife; Von Adelung, Edw.; Voorsanger, W. C. and wife.

Wakefield, W. F. B.; Wallace, Ina M., R. N. (guest); Watkins, J. T.; Wegefarth, Harry M.; Wegefarth, Paul; Weinberger, Joseph; Wessels, A. B.; Wessels, W. F.; White, C. M.; White, L. M.; White, Francis; Whitelock, T. S.; Whitten, W. D.; Whitney, E. W. (guest); Wicherski, O. G.; Wier, T. F.; Williams, Ralph; Williamson, Wm.; Willits, E. K.; Wills, Wm. L.; Wiley, E. H.; Wilson, H. B.; Witherbee, O. O.; Wiltub, E. H.; Winter, W. P.; Wood, L. F., Sr., (guest); Woodward, H. (guest); Worthington, G. B.; Wrinkle, Geo. S.

Yates, J. C.; Yerington, H. H.

Zieg, John P.; Zochert, L. W.

Original Articles

OTITIC MENINGITIS*

By EDWARD CECIL SEWALL, A. B., M. D., San Francisco.

Meningitis of aural origin is similar in many or most respects to the meningitis from other sources of infection. Still, because of the proximity of the infectious source, and the nature of the processes therein, a distinctly important and definite symptom complex presents. A few anatomical and physiological details are pertinent. The dura forms the periosteum of the skull but not of the spinal canal, into the full length of which it extends. It is more adherent in children than adults because of the richer venous connection with the bone. These vessels give rise quickly to protective granulation tissue. Between dura and bone is the epidural space in which are lymph capillaries lined with endothelium and where an infective process may be arrested. The inner surface of the dura is smooth and is lined by endothelium continuous with that covering the external surface of the arachnoid. Thus is formed a potential cavity. This is called the subdural space, is a serous cavity and contains serous fluid. It therefore is capable of arresting to a considerable degree destructive progress. The subdural space communicates freely with the epidural space by fine lymph vessels. Purulent processes can thus pass through without gross destruction. While the pia follows the windings of the brain, the arachnoid bridges over the eminences and thus leaves considerable space for the fluid therein contained. At the base of the brain these spaces are of such extent as to be called cisterna. These subarachnoid spaces, for practical purposes, communicate and through them circulates the cerebro-spinal fluid. It is conceivable on anatomical grounds that by adhesive processes, infected accumulations even here may be more or less delimited. (Brieger.) The pia intimately connected with the brain furnishes its blood supply and not only extends into each and every crevice but also pushes its way through into the ventricles. It is there covered by the thin embryonic layer which becomes the ependyma. From this pia, in which are developed the glands of the choroid plexuses, is secreted, not transuded, the cerebro spinal fluid into the ventricles. From the ventricles it makes its way through the foramina of Magendi, Key and Retzins into the subarachnoid space. Coursing more or less freely through this from the tip of the spine to the top of the brain, it is pumped eventually largely into the venous lakes and sinuses at the vertex. It is helped in this by its pressure which slightly exceeds that of the veins, also by the pulsations of the brain.

The purulent process in the temporal bone that causes brain disease begins in the tympanum, labyrinth or the adjacent pneumatic cavities. Prompt evacuation of pus that has accumulated here is the safeguard that the surgeon must bear in mind

* Read at the Forty-fifth Annual Meeting of the Medical Society of the State of California, Fresno, April, 1916.

while using his best judgment for the advantage of the patient.

Infection may spread to the brain through various channels. Macroscopic changes may direct the labors of the operator, and such extension is by far the most frequent. On the other hand the infection may make its way through seemingly intact bone. In this case we find histologically involvement of the lymphatics or veins which lead inward to the meninges. Passage through the tegmen tympani and antri may be through preformed dehiscenses but is usually through carious destruction. The floor of the middle ear cavity overlying the jugular bulb has been the route for passage of pus, usually through traumatic perforation, but leads to pyemia rather than meningitis. The carotid is in such relation with its anterior wall that it has been invaded, but for the subject of this paper the venous plexuses accompanying it are of more importance as they may become infected and so lead to cavernous sinus thrombosis and meningitis. The inner wall forms a very thin bony protection to the inner ear. Here we have possibly the most easy route to the meninges. (Lermoyez.) Once the inner ear is reached by pus we already have, one might say, a localized meningitis because of the close connection between the labyrinth spaces and those of the meninges. The eroding action of cholesteatoma and the resultant fistula are well known. Jansen first called attention to the frequent involvement of the horizontal semicircular canal. The facial canal may be entered directly or by way of the eminentia pyramidalis and convey the infection through the internal auditory meatus into the posterior, or branching off at the hiatus folopii, into the middle fossa of the skull. Besides through necrosis of its walls the inner ear can become infected through the blood or lymph channels that connect it intimately with the middle ear. From here the infection gains the meninges by way of the sheaths of the vestibular or cochlear nerves, or along the aquaeductus vestibulae, or the vena auditiva interna, or through the aquaeductus cochlea. This latter forms a direct communication between the perilymph and the subarachnoidal space. The saccus endolymphaticus lies in a duplication of the dura and it has been found distended by pus. It communicated its infection to the posterior fossa, giving rise to epidural abscess usually first. The hiatus subarcuatus a vestigial canal from under the superior semicircular canal into the skull furnishes also a possible source of entry. From the mastoid the infection can travel in many directions. The planum mastoideum borders on the cerebellum and lateral sinus, but above through the tegmen or by way of the diploic cells infection may travel for considerable distances. Even may penetrate into the occipital bone and has been known to make its way through the whole substance of the petrous and set up a meningitis or cavernous sinus thrombosis. Through the routes described all the protecting coverings of the brain can be affected.

The infective agents causing the ear trouble are directly responsible for the extension to the brain. Chief among these are the pneumococcus, streptococcus, streptococcus mucosus, and staphylococcus.

Leaving out of consideration the involvement of the dura that precedes or the brain abscess that complicates so often, the pathological changes for the most part have to do with the cerebrospinal fluid. The secretion of this is increased. In the beginning we can conceive that the meninges may be affected by the toxins of the infection, even before there has been actual bacterial invasion. There are many cases on record where, with all the symptoms of a meningitis, headache, vomiting, constipation, stiffness of the neck, Kernig's Symptom, the only pathological change is the excess of cerebrospinal fluid and its consequently much increased pressure. There may be with this more or less infiltration of the brain tissues which has led the Germans to apply the term "Hirn Oedem," the French "Hydropsie Méningée," the American Meningismus, disregarding the rather insignificant brain involvement. The most important pathological change, to repeat, is the increase in the amount of the fluid. Its condition is absolutely unchanged except that the greater dilution makes for a scarcity of cellular elements. Merkens, in explanation of changes not due directly to bacteria, compares the condition of the tissue in the immediate vicinity of a furuncle. Here we have, he says, the small drop of pus. About this there may be a collateral oedema, examination of this fluid would often prove it to be entirely sterile. Without going too far afield into the physiology of the cerebrospinal fluid and the theories as to the causes that disturb the normal condition, it suffices for the scope of this paper that without any demonstrable change in the fluid it may be produced in such quantities as to give rise to serious disturbances. The effect of this increased tension may show in congestion or papillitis of the optic disc. Aside from these changes and the symptoms very little is known of the pathology because no case has come to autopsy. Like serous meningitis one of the diagnostic features of the disease is that while it is a meningitis it is a meningitis that always gets well. It is certainly reasonable to presume however, with Jansen and others, that it may be the beginning stage of a purulent meningitis. It at least makes the understanding of the condition more simple to consider the different pathological and clinical pictures as expressions of a difference in the stage or progress of the disease or of the virulence of attack or concomitant resistance of the patient. The term serous meningitis was and still often is employed to include the above and the following condition. A refinement of terms makes it fit the following condition better as it is now possible to differentiate the two. The Pathology of Serous Meningitis is identical with that of "Hirn Oedem" or Hydropsie Méningée or Meningismus, as given above, except that in this condition there *is* a change in the cerebrospinal fluid. The cellular elements and albumin are increased but still the

fluid is clear and to the eye appears unchanged. There is increased tension and no bacteria.

Acute diffuse purulent leptomeningitis furnishes a picture that many section tables have made familiar to pathologists. Considered as a further progression of the above conditions, it nevertheless may develop so rapidly that apparently we have to deal with pus from the start.

Besides the cardinal triad of headache, vomiting, constipation, the other well-known meningeal symptoms are found with more or less constancy.

An increase in the blood pressure has been suggested by Kopetsky as an early indication. The diagnosis rests upon the classical symptoms and signs, the eye findings, and, most of all, upon the condition of the spinal fluid. It is interesting that nonpurulent or milder types are those more constantly associated with optic papillitis. In the Hydropsie Méningée or Hirn Oedem we have a clear fluid, normal in every particular except the tension and amount. A large amount can often be drawn from these patients at frequent intervals. In what we have termed the Serous Meningitis, there is the normally clear fluid under tension but microscopical examination shows an increase in the cytological elements. No other changes. In the acute diffuse purulent leptomeningitis the fluid varies to a remarkable degree. It may show the faintest cloud or it may be creamy pus. Strange to say this is not entirely dependent upon the stage or severity of process. Mygind, whose excellent observations are largely incorporated in this paper, reports a case where the light milky appearance of the fluid persisted till death. He found explanation in the jelly-like consistency in the infected deposit in the brain. We must keep in mind that the contents of the spinal canal, while a good indication of the condition of the rest of the fluid, may be so shut off by structural elements that free circulation is interfered with. It is possible for instance to have a closure of the spinal canal and death from purulent meningitis with clear fluid at puncture. The fluid usually becomes cloudy in 24 to 36 hours after the onset of symptoms. It may grow progressively more cloudy or the turbidity may gradually clear up.

This cloudiness is caused by an increase in the cellular elements. They may be mononuclear or polynuclear in type and may change from the mono to the poly and vice versa during the course of the disease. The albumin content increases in proportion to the cellular augmentation. Bacteria may or may not be found in the fluid, and here again the explanation lies partly in the distance of our puncture site from the infectious site; also in the virulence and progress of the infection. Mygind reports a case where the fluid was sterile up to five hours before death. It is also possible to have bacteria and a clear fluid. Oseki reported some interesting findings in cases of pneumonia where bacteria were found present in the meninges, which had not given rise to any meningeal symptoms whatever. With the advent of bacteria there is a decrease in the sugar content and this may be a valuable and early diagnostic "sign."

Hydropsie Méningée and meningitis serosa, benignant meningitides, offer a good prognosis. They all get well. In fact, thus was the diagnosis formerly made. Possibly classed among these may be some true acute diffuse purulent meningitides that recover without their true character being known. We know that even advanced cases have recovered (Mygind), and the fluid may not show the true character for reasons already given. Acute diffuse purulent leptomeningitis, prior to the work of Macewen in 1893, was considered uniformly lethal. We now know however that this was not absolutely the case. Macewen, in the field of otology, laid the foundation for principles that now lead in the hands of skilled operators to the saving of about 20% of cases (Mygind).

In the prognosis do we again have occasion to be thankful to Quinke and lumbar puncture. The condition of the fluid gives us important prognostic details. The more cloudy the fluid the more unfavorable the prognosis and vice versa. The progressive increase in the turbidity is indicative of progression of the disease, while a fluid that is clearing gives a more favorable outlook. The mononuclear cell content gives a better prognosis than the polynuclear. A change from the mono to the poly is bad prognostically. A change from the poly to the mononuclear form is on the other hand favorable. Cases may however be fatal even with the mononuclear form persisting, and polynuclear forms have been seen to change to mono just before exitus. We must always bear in mind, as stated above, that the sample of fluid obtained at lumbar puncture may not fairly represent the whole. The streptococcus furnishes the worst and the pneumococcus a better prognosis. Breiger reports meningitis of staphylococcus pyogenes aurus as being the mildest type. The outlook is ordinarily more gloomy in proportion to the number of bacteria found and vice versa. No cases have recovered where the condition of "pure pus" has been reached. In regard to the eye findings, as mentioned before, papillitis, being merely a sign of pressure, is not necessarily sinister in portent, as it is often found in the meningitis with clear fluid. Also Kernig's sign, stiffness of the neck, and temperature are not reliable prognostically. The age of the patient is important, as most of the cases of recovery have been in patients between one and thirty years of age. Prognosis is poorer in very young and very old. There is no agreement as to whether the meningitis associated with chronic otitis or acute otitis is of more hopeful form. Probably that with chronic forms is worse. Cholesteatoma one would expect to take a more important part than it does in influencing the outcome. Where all symptoms make progress steadily for the worse a fatal outcome is usual. Brain abscess influences unfavorably the prognosis, but this is not true of sinus thrombosis or extradural abscess.

In the handling of meningeal complications in the course of an otitis, lumbar puncture must be employed at once as our course must depend very largely upon its findings. If the case comes under

the heading hydropsie méningée or serous meningitis it will recover, except as indicated. The lumbar puncture may have to be repeated, but the symptoms which are essentially those of pressure can usually be controlled. If, in spite of the clear fluid, we have an acute diffuse purulent leptomeningitis the progression of the disease will demand repeated spinal puncture and our diagnosis may be made as indicated previously. Once the diagnosis is established, the treatment becomes immediate surgical intervention. The one most important point for the favorable outcome is the early operation. The percentage of cures is largely dependent upon this. In all cases, whether complicating acute or chronic otorrhoea, the radical mastoid operation should be done. Experience has shown that by so doing space can be attained for properly overlooking the dura of the middle and posterior fossa and also gives opportunity for study of the labyrinth wall. The electric burr should be used throughout because it has been well established that infection has been spread by the jarring of the chisel blows.

Any fistulæ or evidence of disease of the inner ear gained before or at the time of the operation demands the simultaneous exenteration of the inner ear. The next step as a routine is the free exposure of the dura covering the middle fossa and over the sinus from the knee well down toward the bulb. Any epidural pus will thus be exposed and drained. The condition of the sinus content must be determined; by puncture if necessary, in one or more places. If found diseased, it must be opened freely. The presence of pus may at this time show it to be advisable to ligate the jugular and bring the upper end out through the skin incision for drainage. Apart from the sinus, opinion is divided as to whether the dura should be opened over the middle and posterior fossæ in all cases. There are weighty arguments pro and con. I am in agreement with those who favor opening only where there are macroscopic changes of such a nature, e. g., fistulæ, gangrene, etc., as to lead one to expect localized collections of pus on the surface of or in the brain. Of course, where the symptoms warrant the diagnosis of a complicating brain abscess, it must regularly be searched for. Following these principles, some abscesses and purulent collections will be missed, but on the other hand danger from infection, prolapse and later infection are diminished. Such opening through the dura is usually not of much lasting account as far as drainage is concerned.

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Discussion.

P. A. Jordan, M. D. My remarks will be brief and pertain only to the paper of Dr. McNaught. I have been impressed with the scarcity of definite cases of nasal origin. My determination is that they are very few as compared to otitic cases. I found it difficult to locate any that I could put my finger on, either of my own or my confreres whom I consulted in the matter. A report from England recently pertained to an epidemic of cerebral spinal meningitis that had broken out in the army in 1914, where men had been but a short time in camps, and cerebral spinal meningitis had broken out in these camps. The medical insurance committee worked in conjunction with the medical committee of the army. These went into the subject thoroughly and located twenty-four laboratories all over the war zone. The report of the committee was to the effect that the meningococcus was epidemic in the throats of the populace; that where people were enclosed in camps or in close quarters in cities, cerebral spinal meningitis broke out here and there. It was supposed that the meningoeoccus formerly made its entrance to the dura from the nose and throat.

I only want to add my own experience in this line on the subject of nasal operation. It would seem to a trained expert that by nasal operation one might see a number of cases of meningitis of nasal origin. In 731 cases of nose operations I cannot recall, nor can I find from my records, any cases in which I found meningitis. The operations were as follows: 21 cases of ethmoidectomy, 236 cases of sub-mucous resection of the septum, 485 cases of minor operations, as spurs, etc. I have, therefore, come to the conclusion that meningitis of nasal origin is in very small numbers as compared to the otitic origin.

J. MacKenzie Brown, M. D.: Dr. Sewall has so thoroughly covered the subject of meningitis of otitic origin that practically all I can do is to emphasize some phases of his paper. Especially do I wish to emphasize the advisability of an early operation on the middle ear and mastoid, as delayed paracentesis of the membrana tympani and allowing a well developed mastoiditis to run for weeks, are the conditions that lead to the development of meningitis. As soon as meningitis symptoms develop, early intervention is the only chance, by reaching a localized lesion before it becomes general. The early operation is, I believe, our only hope in these cases. One should not lose sight of the fact that many of these cases of meningitis occur in the course of an otitis media, but are not due to the otitic lesion at all. They are of haematogenus origin, from a foeus of infection in the naso-pharynx, and that the otitic lesion is but a part of the

picture and not an etiological factor in the meningitis, just as the meningococcus is believed to gain entrance to the blood stream through an infection of the naso-pharynx. Needless to say, operative procedures direct to the ear in these cases would be useless.

Regarding the radical mastoid operation in every case, it would seem to be that many cases could be done with a simple operation, for instance, those complicated by a lateral sinus thrombosis.

A. W. Hoisholt, M. D.: I hardly expected to be called upon to say anything regarding Dr. Sewall's paper, but since I have been called upon will speak of a case of which I told Dr. Sewall.

In the Napa State Hospital we have but little opportunity for observing cases of this kind. The case that I refer to is one that occurred outside the hospital. I was called in to pass upon the brain condition. When I called I found symptoms of meningitis in a boy seven or eight years of age. This was about sixty-five hours after he had left the schoolroom. I suggested making a lumbar puncture. After some discussion a puncture was made and the fluid carefully taken to the laboratory of the hospital for examination. We made a culture of the fluid and found a pure pneumococcus. The boy's condition improved during the next twenty-four hours in a general way. On the first visit, I asked the physician in charge if he had examined the boy's ears, or thought they had to do with the origin of the meningeal infection. He said he had examined the ears and found nothing, but that he had attended the child three weeks previously during an attack of broncho-pneumonia and thought possibly the trouble started there. The next day we made another puncture and removed about 12 c.c. of fluid, and the examination showed the pneumococcus in pure culture. On the morning of the third day I noticed a fluid in the ear which was examined and found to be a muco-purulent discharge. Some of this discharge was removed and developed a pure culture of pneumococcus. The child died on the sixth day after he left the schoolroom. The first specimen of spinal fluid was slightly cloudy and contained very few polymorphonuclear leucocytes. The second specimen was more turbid and contained a larger number of leucocytes.

W. F. Schaller, M. D.: I hesitate to address this section so often to-day, but wish to compliment the gentlemen who read these interesting papers. I was especially interested in what Dr. Sewall had to say regarding lumbar puncture for diagnostic purposes in the classification of meningitis.

As regards serous meningitis, I believe that this term should be limited to those cases in which the cerebro-spinal fluid is under increased pressure but does not contain an increase in cells or albumen. Fluids which have a definite increase in cells, and albumen, are those in which the meninges are irritated and inflamed, so serous meningitis to my mind cannot be correctly applied in such cases.

Dr. Naffziger's paper on the surgical treatment of meningitis calls to our attention the recent operations suggested for the relief of this condition. I refer particularly to the corpus callosum puncture of Anton of Halle, and the drainage of the cisterna magma by Haynes of Cornell. I believe the first operation to be a valuable and justifiable procedure which has been followed by a certain measure of success in my experience especially in secondary hydrocephalus; with the latter procedure I have had no experience, but on account of the high mortality following this operation I have hesitated to advise it.

C. F. Welty, M. D.: The different forms of meningitis should not be grouped together in a symposium of this nature, because of the fact that tubercular meningitis, cerebro-spinal meningitis and purulent meningitis from the ear or nose are so different that they only complicate the subject very much. And when we begin to speak of serous meningitis and meningisms, we again cloud the issue.

I will confine my remarks entirely to serous and purulent meningitis from the ear and nose.

In the first place, the differential diagnosis between serous meningitis and meningisms does not exist according to my nomenclature; such statistics as Dr. Sewall has quoted originate largely in the minds of over-enthusiasts.

We can have all grades of serous meningitis from the slightest and most transient to the most grave; simulating in every detail that of a purulent form. In fact, I have seen some such cases—as for instance temperature, stiff neck, fixed eyes, coma; such cases are not often of the serous variety.

I have always maintained that there is a time when a serous meningitis becomes purulent, which will be illustrated by a case report shortly to follow.

Reasoning from such an analogy, you can readily understand why it is advisable to operate before the serous symptoms develop—for when you have a purulent meningitis, the patient invariably dies; regardless of the statement of Dr. Sewall that 20% recover. In fact, some five or six years ago there were only some 20 authentic cases of purulent meningitis on record that had recovered. Some few years since, Dr. Kopetsky devised an operation to drain the brain that promised more than any operation devised before. I do not think there is yet a single authentic case on record.

Now as to lumbar puncture. Lumbar puncture is only of value when a positive finding is made—because you may have a purulent meningitis with a negative finding (again bacteriologists make mistakes in their interpretations on lumbar punctures; such cases I could report if I had the time). So in summing up the value of lumbar puncture, I will say that it is of little value and only in a negative way—besides this is not always reliable.

I wish to report a death from purulent meningitis eight weeks following a nasal operation.

The patient had a serous meningitis the day following operation. There was a dropping of cerebro-spinal fluid from his nose for several days continuously, and at intervals for several days more. All this time, he had fever and intense headache; all this subsided one week following operation and the patient was lost track of, when I was called to a hospital and found the patient in acute delirium, suffering from purulent meningitis. A few days prior to this last visit, the man went on a debauch and as the history reports, "vomited through his nose." The following day his real trouble began and he died in a few days.

The pathological findings were interesting. There was a dehiscence in the cubiform plate of the ethmoid; the mucous membrane covering the dehiscence was torn in a longitudinal direction. Just within the skull cavity was an erosion of bone, showing that the meningitis was first serous, then purulent and circumscribed. Afterwards spreading all over the base of the brain.

Another case to show the mistake of a bacteriologist in a lumbar puncture finding:

A nose specialist attempted to chisel a spine from the septum of his own nose; the chisel entered the brain cavity. In a few days the man was comatose. Diagnosis by lumbar puncture; meningitis. Autopsy finding some two weeks later—brain abscess, with no meningitis at all.

In this particular case, I said there might be a possible misinterpretation of the findings and as the patient was sure to die, why not uncover and see if something could be done? At autopsy, a brain abcess was found and no meningitis.

All ear, nose and throat specialists are aware of the danger of meningitis and the serious nature of the affection. It is principally for that reason that I have been advocating for the last twelve years the advisability of early mastoid operations. I can assure you that in early operations there is no danger provided you understand surgical principles and know how to do the operation. This is illustrated very beautifully by a report of 107 acute mastoid operations without a death, at the 1915 meeting of the American Medical Association. I can further report some 15 more without a death. Furthermore, I have operated some 350 radical mastoids with but one death. In this series there were some three or four deaths. However, the fatal malady was fastened upon them before I was called to the case.

In conclusion, I cannot help but say that the physicians themselves are largely responsible for the deaths from meningitis, because of the so-called conservative surgery, and I wish to establish the fact that it is not conservative surgery at all. All surgeons will tell you that early operations are the life savers.

Jno. J. Kyle, M. D.: Unfortunately purulent meningitis comes on so suddenly that we are oftentimes taken unawares and have no opportunity to combat the disease.

I want to speak in regard to meningitis from nasal sinus disease and to report a very interesting case of meningitis purulenta from nasal sinus suppuration.

In the first case the patient complained of intense pain in the head. If you have a patient running a temperature and pain in the head, it should be looked upon as something suspicious of suppuration in the sinus. The patient complained of pain for many days, and was given the ordinary drugs for the pain, but without effect. Three or four days after the onset of the disease, the right eye began to bulge and I was called in to determine whether there was any trouble in the nose that might have to do with the eye trouble. X-ray pictures were taken and showed a distinct accumulation of pus in the right ethmoid cell. A few drops of pus came down into the middle meatus. The next day the patient began to show signs of apathy, etc. We removed the middle turbinates. The pus appeared in the orbital cavity. This was a case of purulent meningitis and cavernous sinus disease.

The other case was one in which we had a frontal sinus abcess and a meningitis. In this case we operated too late. The meningitis was well established before we operated. We opened the frontal sinus and found it full of pus. The man died. We performed a post mortem examination and sought to find the source of infection. A pus cavity had formed extra-dural, ruptured, and had filled the ventricle and spinal canal as well with pus. The infection was staphylococcus alba.

In tubercular meningitis, I am not convinced that we are going to prolong life by removal of any sinus or mastoid disease.

B. F. Church, M. D.: I agree with the essayist that all foci of infection should be removed as speedily and thoroughly as possible in case referred to.

In acute mastoiditis, I would counsel conservatism in operating. A free incision through Shrapnell's membrane extending to the bone and well into the auditory canal will save many of these cases a more radical procedure.

Mastoidectomy performed in cases of acute mastoiditis, before the system has had time to build up immunity or to wall off the foci of infection, has the danger of spreading the infection.

F. M. Shook, M. D.: Although meningitis of intra-nasal origin is a rare complication, yet it is by no means so infrequent as one might suppose. Two cases happened in a large metropolitan hospital about one year ago. The first case followed a submucous resection of the nasal septum, and the path of infection was demonstrated at the autopsy. The second case followed a Mosher operation. This patient, a stenographer, was operated Saturday, developed symptoms of meningitis on Monday and died on Friday.

Recovery from meningitis of otitic origin is rare, but authentic instances are not unknown. One of these cases was observed by Dr. Jas. Dwyer, about six years ago, in a patient suffering from a chronic suppurative otitis media. The diagnosis was proved by examination of the cerebrospinal fluid following puncture. The patient was treated with intra-spinal injections of dilute urotropin, and recovery was followed by no sequela. Another case came under my observation about one year ago. A radical mastoid operation was performed on a boy who was suffering from an acute exacerbation of a chronic suppurative otitis media. Symptoms of meningitis were presented within twenty-four hours following operation. The cerebro-spinal fluid showed many polynuclear leukocytes with streptococcus. No special treatment other than repeated lumbar punctures was given. Recovery took place in about four weeks.

Robert B. Sweet, M. D.: I wish to speak of a case of hemorrhagic meningitis which should be of especial interest to the neurologists present on account of the multiplicity of lesions.

A woman, age 36, C. S. O. M. since childhood; nausea and vertigo for past month, blood pressure 200. Was picked up from the floor unconscious, nystagmus to the left. Gave fistula test in the right ear; cervicle rigidity; Kernig present; pupils equal; lumbar puncture drained 40 c.c. of pure blood under pressure, sterile.

On operation of right mastoid more blood in dural space, fistula of external semi-circular canal. Regained consciousness after operation, nystagmus to the left, partial paralysis of the right seventh. Four days later paralysis of the third, sixth, but not of the fourth, and papillitis on the left side. Later aphasia. Post mortem showed diffuse hemorrhagic meningitis, dehiscence of bone on anterior surface of petrous portion. No localized meningitis, no abscess.

Hans Barkan, M. D.: I would like to ask Dr. Franklin what percentage of choroidal tubercles he has found in his examination of tubercular meningitis cases?

Closing Remarks.

E. C. Sewall, M. D.: I was very much interested in what Dr. Shook said about post operative cases.

H. C. Naffziger, M. D.: I have nothing further to say on the subject.

THE JOURNAL
WOULD
BE GREATLY HELPED
IF ITS READERS
WOULD
MENTION TO ADVERTISERS
THAT
THEY ARE PATRONIZED
BECAUSE
THEY ADVERTISE WITH US

PRESENT AND PROPOSED LEGISLATION FOR THE PREVENTION OF BLINDNESS.

By EDWARD F. GLASER, M. D., San Francisco.

Prevention is the watchword of the scientific and medical world to-day, and the ideal physician is he who strives to prevent disease, rather than he who awaits and treats arising pathological conditions which so often might have been prevented. Surely the doctor's highest value is not simply in his visit and collection of fee, but in the bigger, broader, physical and mental atmosphere he can produce, and in the constructive and educational work that will eliminate the ignorance and carelessness which produce unnecessary disease.

It is safe to say that fully 100,000 men, women and children in this country are within the strict definition of the word, blind, and that about 1500 of them are in California. These figures are not only startling when we consider the number of people deprived of that most wonderful of God-given senses, viz., vision—but they become sensational when we realize that fully 40 per cent. of them are needlessly blind; that is, they are not sightless unfortunates because of some original necessary eye disease, nor because of some constitutional or hereditary defect of the visual organ itself, but because of the ignorance or carelessness which permits social and industrial accidents, which allows trachoma to spread, phlyctenular keratitis to exist, and which encourages ophthalmia neonatorum.

These 1500 blind in California deprive the state yearly of more than, at a minimum, half a million dollars' worth of productive labor, and it is costing the state approximately ten times as much to educate one blind child, as it does to educate one seeing child. In our great and richly productive state, we can afford the economic loss, we can afford the education of our blind—but can we afford the stigma of not striving to reduce the number of the preventably blind? In this work the doctor, and especially the ophthalmologist should lead, for it is to them that the general public looks for the safeguarding of this special sense, and we, by our silence, lull them into a false sense of security. As someone has expressed it, we need education to a decent respect for our responsibilities in this regard.

The efforts to prevent blindness have been directed through many channels, legal, professional, institutional, social and industrial; and we have been requested to speak of what the State of California itself is doing in the preventive work. The State Board of Health issues a list of contagious and communicable diseases, reportable by law to the local health officer, and in this list are trachoma and ophthalmia neonatorum. Too much emphasis cannot be put upon this one simple measure of the prompt reporting of a communicable disease. Physicians should realize the importance of this and the responsibility upon themselves when they do not report. A case reported is a case safeguarded, a physician aided and a community protected. Vital statistics give the locality, character and number of cases, without which no adequate or comprehensive program can be started in any campaign against disease.

California with its wealth of climate, food products, plenty of opportunity and space for everyone, has fortunately had, in the past, comparatively few cases of trachoma, the disease which finds its most congenial soil in personal uncleanliness and filthy housing; but recently cases have been reported from many localities in the state, and the number of cases is increasing, and trachoma is now found among our native-born school children, and fear has been expressed that it may become in California, the public menace it is in the Southern states. It is but a few years ago that the South had comparatively few cases—a condition similar to that of California to-day. Now, it has been estimated, that in certain sections of the Southern states, nearly 40 per cent. of the inhabitants are suffering from trachoma or its after effects. It has become one of their greatest public health problems, and it is interesting to note, that in Kentucky, for economic, as well as humane reasons, all three political parties (Progressive, Republican and Democratic) have inserted planks in their platforms (the only plank dealing in any manner with public health) recommending that the State of Kentucky "supplement and later continue the work of the United States Public Health Service for the Prevention of Blindness from Trachoma."

Let us therefore take warning from the present condition of the Southern states, and check the spread of this disease in California while it is yet controllable. Let us prevent the long-continued suffering of the trachomatous patient: let us prevent the damaged vision and increase in the numbers of the blind: let us prevent the great economic and social loss to the community: and the first requisite in the work is the reporting of all cases to the proper health authority as required by law.

It is needless to say that the trachomatous patient should be excluded from the schools, factories and any other places where people congregate, and this isolation is best secured by co-operating with the proper health authority, who upon securing report of the case, should insure the isolation and where necessary, instruct the patient and contacts as to the hygiene of patient and contacts, so preventing others from becoming infected with the disease. This reporting would

also assure adequate treatment for cases not already properly cared for.

An effort is to be made at the next legislature to obtain a law preventing the use of the common or roller towel. San Francisco and Los Angeles already have local ordinances, and the State Board of Health will back similar legislation for the whole state. It is unnecessary for me to explain to you gentlemen the part the roller towel plays in the spread of trachoma and other eye diseases—so let us encourage and help the passage at the next session of the legislature, of a bill making the use of the common or roller towel, as well as the common drinking cup, impossible in California, and so check a common means for the spread of vision-injuring contagions.

One of the most meritorious bills passed by the 1915 legislature, was the bill designed to prevent blindness from ophthalmia neonatorum. This bill originated with the State Board of Health, which is made responsible for the carrying out of its provisions. The new law in California requires doctors, midwives, nurses, etc., to report within twenty-hours any case of ophthalmia neonatorum to the local health officer who is required to investigate the case and report to the State Board of Health. The investigation of the local health officer would naturally bring about prompt and adequate treatment for all uncared-for cases. Also this investigation would protect the contacts by the instruction to the family as to the contagiousness of the disease, and as to the care and hygiene of the patient and of those who come in contact with him.

The law makes the failure to report any case of ophthalmia neonatorum a misdemeanor, subject to a fine. In this law ophthalmia neonatorum is defined as any inflammatory condition of the eyes occurring within two weeks after birth, independent of the nature of the infection. This emphasizes and makes necesssary the early recognition and diagnosis, which is important in the checking and curing of the disease. The law directs the free distribution by the State Board of Health of a scientific prophylactic. The prophylactic selected is a one per cent. solution of nitrate of silver. The distribution is accomplished by the Bureau of Communicable Diseases located at the State Hygienic Laboratory, Berkeley. Sample outfits have been sent to every physician in the state, and others may be obtained from the health officers throughout the state, and from the State Hygienic Laboratory or its branches, or from the depositories (about 175) which the State Laboratory maintains in the drug stores of many towns throughout the state.

The reporting of ophthalmia neonatorum is compulsory in over thirty of the United States —the use of a proper prophylactic compulsory in six states, and the free prophylactic outfits are distributed in over thirteen. The consideration of ophthalmia neonatorum leads naturally to the yet unsolved and apparently unsolvable problem of the midwife. It is easy to denounce the midwife and it is theoretically right to say "do away with the midwife," but when we consider that in the whole United States about 20 per cent. of the deliveries are by midwives, and that in some of the larger cities over 60 per cent. of the confinements are attended by midwives, it becomes evident that we cannot summarily do away with the midwife without offering a substitute—as for instance, free and moderately priced beds in maternity wards of hospitals; and free and moderately priced maternity services in the homes. It seems to me that in finding a substitute for the midwife, lies a big opening and opportunity for the woman physician, not only professionally, but socially—for as long as emigration continues, among the poorer classes of foreign importation the instinct of the ages is often outraged by the attendance of a man at the lying-in bedside. In California there is agitation started to secure legislation to regulate and license midwives, compelling them to pass certain requirements as to knowledge and experience as a requisite for legislation—and compelling them and their outfits to be subject to periodic inspections. If such legislation is passed, it should be a prerequisite for the registration of midwives that they should give satisfactory evidence of a proficiency in the knowledge of the dangers and the prevention of ophthalmia neonatorum.

Personally I am yet to be convinced that either the municipal or state recognition and control of midwives is a good thing; rather is it a palliation of a bad thing—and so far, nowhere has the supervision of the midwife proved entirely satisfactory. So why work for legislation—rather put the energy into establishing the substitutes which will make possible the doing away entirely with the midwife.

Any suggested legislation about industrial eye accidents would seem more than unnecessary while we have in the state such a fine working force as the Industrial Accident Commission, which has power to act and is using it, in the reduction and prevention of industrial accidents. The Industrial Accident Commission is not only a clearing house for industrial accidents, and an insurer against them—but also as a preventer of accidents—the safety first department being a big and perhaps most important one-third of the work of the commission, comprising, as it does, the study and installation of safety devices and measures. They not only advocate the use of goggles on employees in trades hazardous to the eyes—but they have established safety first exhibits which include various forms and types of goggles and eye-protective devices—and are educating the employers up to the necessity of providing, installing and insisting upon the use of them. The Industrial Accident Commission has made it a point to have installed iron and glass guards over emery wheels. Doctors can aid the good work of the Commission by co-operating with them, and reporting to the Commission promptly any eye accident of whatever magnitude, and also reporting any unsafe practices or non-use of goggles or protective devices in hazardous employments.

At their safety first museums at 525 Market street, San Francisco, and in the Union League Building, Los Angeles, there are extensive exhibits of goggles and eye protecting devices, together with many pictures and cuts of eye injuries which might have been prevented by the use of simple and specific measures.

So here, the state, through the Industrial Accident Commission, is doing fine preventive work—and we can aid by our co-operation with the Commission and by assisting in the education of the workman to the vital necessity of using the protective devices.

Ophthalmologists would render valuable services to the state and to the industries by doing some original research work and studying the effect of certain kinds of occupations upon the eyes of the worker, and where necessary, determining, not only the cures, but especially the preventive measures. As, for instance, has the cause of decrease in vision of saw-filers been fully determined? And what is the prevention? Or how can we prevent "pink eye" among workers in oil refineries and around gasoline? Blindness from wood or methyl alcohol is on the increase in the United States and general or federal legislation prohibiting the sale of wood alcohol is the thing to be desired. Wood alcohol is a most excellent solvent and mixes easily with all sorts of liquids, so because of its cheapness, it is much used in the arts and industries—but since the revenue tax has been removed from denatured alcohol, making it cheaper than wood alcohol, and as denatured alcohol answers every purpose, and most of them better than wood alcohol, except perhaps, in the manufacture of some forms of gunpowder and high explosives, there should be no use of so virulent a poison as wood alcohol. The insidious effects can be obtained not only by drinking it, but by inhalation or the rubbing into the skin, and no treatment seems of avail for the optic atrophy produced. In California we are protected from wood alcohol poisoning by the Pure Drug Act, which specifies that only ethyl alcohol is to be used in the manufacture of drugs—and the Pure Food law which prevents the use of any deleterious or injurious article in foods, and the Poison law compels proper labeling, with the name of the article, and word "poison" and the name and place of business of person furnishing the same.

As in a broad sense ophthalmologists are concerned not only with the prevention of blindness, but also the elimination of evils which affect or damage eye efficiency, so should they be interested in and encourage such problems as the proper illumination of our public schools, of stores, factories, and public buildings; and strive to have an expert on illumination in consultation on the plans of all public buildings, especially schools.

Also the formation of classes in our public schools for the visually handicapped pupils, is to be considered and encouraged. Some cities in this country and abroad have special schools for the highly myopic (Boston, Toledo, Cleveland), where much of the work is done by the ear, and books printed in heavy face large type are used. School medical inspection in which special attention is paid to visual defects has been promoted in many parts of the country as a result of the efforts of the A. M. A. Committee, and in most of the larger cities of California some good work is being done by the school inspector and the school nurse, in recognizing the importance of and insisting upon the correction of errors of refraction, as well as directing treatment for eye diseases.

Special legislation is needed, and it is hoped to have such passed at the next legislature, separating the school for the blind from that of the deaf, now combined in one. It is suggested to use the present beautifully situated institution in Berkeley for the use of the deaf, and establish the school for the blind in some other place. Superficial consideration will indicate the wisdom of the separation, as the methods of teaching, the methods of working, the methods of playing and the discipline of the two are totally different; and the combining of the two does not do justice to either, or credit to the state. Only nine of the backward Southern and Western states have their deaf and blind children combined in one school. Washington has separated them in the last five years, and Oregon has never had them together.

In the care and education of the blind, California is doing herself no special credit, as the school for the blind restricts its pupils to the school age, and the accommodations are not equal to the demand—there being a waiting list of blind children desiring entrance. The state should not only have a larger, more thoroughly equipped school for the blind, separate and distinct from the school for the deaf—but also requires that some provision be made for the care of the blind baby or child under six years of age, as it is in those first years of life that so much can be done in the training and education before wrong teaching or no teaching has encouraged fixed habits or has neglected opportunities for developing the other senses.

To conclude: In the study of legislation of the prevention of blindness, the first thing to be desired is for ophthalmologists to know and aid in the enforcement of the legislation now in existence—especially the reporting to the proper authority of trachoma, and see that the proper isolation and instruction is insisted on—to carry out the new ophthalmia neonatorum law, seeing that each case is properly reported and adequately treated, and above all, advocating the use of the prophylactic—and to co-operate with the Industrial Accident Commission and aid them in their educational and preventive work,—to encourage school medical inspection—and as for the new legislation to be obtained, not to forget to work for the abatement of the roller towel, and separation of the schools for the blind and deaf.

At some not far distant session of the state legislature may we not hope to secure for California a commission for the blind as is existing and

working in Ohio, Massachusetts and New York—a commission, under which could be grouped all the problems of the blind—physical, educational, social and economic.

Discussion.

G. A. Briggs, M. D.: The doctor has covered this subject so well that there is very little left to be said. I want to mention one point, and that is regarding the use of these collargol salts, instead of silver nitrate. I had a case of ophthalmia referred to me recently after the use of argyrol. We think we are perfectly safe in using a 10% solution of argyrol instead of a 1% solution of silver nitrate. The use of protargol may be justifiable but I doubt even that.

P. A. Jordan, M. D.: In our present semi-chaotic relations with the Accident Board, I think we should help instruct the accident insurance companies on this one point, namely, that all eye accidents should be immediately and forthwith referred to an oculist, and not be sent to a general practitioner who may be in charge. I have seen already two very grave results which might have been prevented, and the permanent damage lessened had the cases been referred to a specialist in the first place. I hope we will all make a strong point of this, and try and instruct the accident insurance companies not to advise, and even urge or practicallly compel their men to report to the general physician selected, allowing him later, if he sees fit, to call in an eye specialist.

B. F. Church, M. D.: The subject of Dr. Glaser's paper is timely, especially his reference to trachoma in California. On account of the rarity of the disease in this state in the early days, and its prevalence now, some of us are living in false security. During several years' practise in Los Angeles, prior to five or six years ago, I do not remember to have seen more than two or three cases of trachoma in the native born. Since that time, during a residence at Redlands, its prevalence has been noticeable.

An Indian reservation near Banning and the Indian school at Riverside have many cases. I believe the disease is spreading in this state and that we should pay attention to it.

F. L. Rogers, M. D.: Previously the trachoma cases in Southern California were among the Mexicans. At Long Beach we have had considerable of an addition to our Mexican population during the past six months, and we have had a number of cases of trachoma reported among that population which were not so numerous until six months ago.

I want to testify to the fact that products of silver, that is argyrol and protargol, are absolutely unsatisfactory in my hands in the treatment of such conditions. I think silver nitrate is medically by far the most reliable remedy, and I think I would be almost criminally negligent to use anything but silver nitrate in cases of gonorrheal infection, either in children or adults. Not long since I had a case of a little girl about eight years of age who was brought to me by a general practitioner. I suspected gonorrheal infection and the microscope proved that it was gonorrheal. She made such a fuss about the silver nitrate that I tried a 20% solution of argyrol and even a 40% solution, but the condition became worse. I went back to the silver nitrate and the condition promptly began to clear up and got well. This subject is one of very great importance to us and to the public as well.

Thos. J. McCoy, M. D.: I first wish to congratulate ourselves on the paper we have heard and the way it was handled, recalling to our minds our responsibility in these cases.

Three years ago I spent three months in Vienna in Fuchs' Clinic and found nitrate of silver is used almost exclusively.

Regarding the doctor's idea, I find the commission is only too willing for our assistance and often soliciting our advice as to the best method of eliminating eye accidents. But, as the doctor suggests, if these accident cases were referred to an oculist in the beginning, many cases would be conducted to a safe termination and cure.

V. H. Hulen, M. D.: When my ophthalmia and trachoma patients in private practise are informed that the law requires me to report their condition they at once desire to know what the authorities will do in their cases. If I may, I desire to ask Dr. Glaser just how I shall reply?

Another point, could we say to such patients that as long as they are under the care of a competent specialist their condition is not reportable, but as soon as they disappear from our observation before recovery the law then requires us to immediately report them to the proper officials, I believe they would very probably be influenced thereby to continue treatment until pronounced cured, rather than by the present law which simply requires them to be reported when first applying to us.

E. F. Glaser, M. D.: I was much pleased with Dr. Franklin's and Dr. Briggs' remarks regarding the use of the 1% solution of silver nitrate as the prophylactic. We receive some interesting letters regarding this. One doctor sent the ampules back and said he would never use them again, that he had obtained such an intense reaction. He was asked how he had used the prophylactic and stated that he had first washed out the eyes with a creolin solution, then he instilled two drops from the wax ampules, and then he applied a 1% yellow oxide mercury ointment in the eyes. He said that the State Board of Health should not be sending out anything which produced such a condition. In answering his letter, we tried to explain the effect of the creolin solution upon the mucous membrane.

I would ask Dr. Jordan whether he was referring to the Industrial Accident Commission, the insurance companies or the corporations. The Commission has emphasized the importance of eye accidents being sent at once to a competent specialist.

Last week I helped formulate a letter for a corporation who perhaps for the sake of economy and convenience had left their eye cases in the hands of the general practitioner. In this letter they directed that all eye cases of whatever magnitude be referred at once to a competent specialist.

Dr. Jordan: I referred to corporations.

Dr. Glaser: Regarding trachoma, the vital statistics show that 57 cases were reported last year from Los Angeles. So far this year there have been seventeen cases reported. The fifty-seven cases referred to are evidently not Mexicans, but from the names given, I should judge they were American-born children, there being no Mexican names among them.

Our clinics show that trachoma is increasing rapidly.

In answer to Dr. Hulen's question,—one is compelled by law to report all cases of trachoma to the proper health authority whose duty it is to investigate when they deem that the circumstances, locality or the attendance upon the case make it advisable. The authorities would naturally expect that any case reported by any member of this society would be properly isolated, instructed and competently taken care of. If the case were not properly handled, then it would be the duty of the authorities to insure this.

MENINGITIS OF NASAL ORIGIN.*

By HARVARD McNAUGHT, M. D., San Francisco,
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Stanford Medical School.

The subject of meningitis of nasal origin is one with a compendious literature. In considering it in a paper of this scope we must confine ourselves to well ascertained facts, instructive and interesting as the many theories may be.

I wish briefly to call to mind a few peculiarities of the anatomy of this region, which would seem to make it an ideal starting point for the disease in question. The inspired air, carrying many pathogenic organisms, constantly passes through the nares. The various accessory cavities with their mucous membrane lining, small ostia, and favorable conditions of heat, moisture, and dead organic matter, would apparently offer an ideal cultural ground under local or systemic conditions of lowered resistance, were it not for certain protective agencies, viz: The expulsive action of the ciliated epithelium; a supposed bactericidal action of the nasal mucous,[1] its being a poor culture medium,[2] and its mechanical agglutination and enmeshing of the bacteria,[3] we would find meningitis from this source an extremely common thing. Another saving factor which may be mentioned is that the nasal mucous membrane has a collateral blood supply from the bone itself. There is also no doubt that an immunity to many organisms exists in the nose, owing to their constant presence there, and that this immunity is only overcome by fresh invasion of virulent germs, or lighting up of avirulent ones by systemic or local depression.

The frontal sinus and ethmoid labyrinth are in direct relation to the dura; the sphenoid to the cavernous sinus, the maxillary antrum to the orbit. The veins of the frontal sinus anastomose with the longitudinal sinus,[4] the veins of the ethmoid empty into the superior and sometimes the inferior ophthalmic vein, the veins of the ethmoid also anastomose with those of the dura, and the veins of the sphenoid anastomose with the cavernous sinus. Killian demonstrated communication between veins of sphenoid sinus and the sheath of the optic nerve by means of silver injections.[5] Here, then, in the venous anastomosis is one very apparent route of invasion. We have also, in not very infrequent instances, dehiscences of the walls of these cavities, thus bringing the nasal mucosa in direct contact with dura. The lymphatics of the nose have a direct connection with the peri-meninges.[6] The olfactory nerves communicate directly with the nasal mucosa through the cribiform plate.

The modes of invasion of the meninges are:

First: By sinus disease, either acure or chronic, causing necrosis of underlying bone. When there is a dehiscence in the bony wall the invasion is through mucous membrane direct. There may be an invasion through the bone, with no apparent involvement of it,[7] but Hajek and others have shown that there is a hemorrhagic infiltration as well as numerous bacteria present in the bone substance in such cases.[8]

Second: By thrombosis of brain sinuses by means of communicating venous channels. The sphenoid sinus is most commonly the source of thrombo phlebitis complications, the ethmoid next through the anterior and posterior ethmoidal veins.

Third: By lymph channels. There is a considerable doubt as to these being instrumental in conveying the disease. Logan, Turner, Gerber, Hoffman, Ogston, Mayer and many others are of the opinion that they play little or no part in the process.

Fourth: By the fibres and sheaths of the olfactory nerves. This was proved in Hayen's case, in which he packed a nose with perchlorid gauze for bleeding. This patient died a few days later from meningitis and the autopsy showed the olfactory tract and nerve fibres stained brown to the meninges.

Fifth: By involvement of neighboring structures. Meningitis has been caused by maxillary sinus infection extending to the orbit, the abscess thus produced infecting the meninges by way of the optic foramen, or ophthalmic vein.

Sixth: By bacterial invasion of the blood current without thrombophlebitis. This is shown in cerebrospinal meningitis, where the meningococcus is harbored in the naso-pharynx and posterior nares. The germ is always recovered in the blood, and apparently reaches the brain covering in no other manner.[9]

These, then, constitute the avenues of infection of the meninges. The diagnosis, pathology and bacteriology of the disease are the same as in that arising from any other source, and will be omitted.

From the standpoint of origin, we may classify meningitis as:

First: Those cases arising from chronic sinus infections. These constitute the greatest number of cases of nasal origin apart from the epidemic form. The frontal sinus, owing to its large surface contact with the dura and its frequently poor drainage due to stenosis of the duct, internal septa, etc., is responsible for more cases than the other sinuses,[10] the sphenoid coming next.

Second: Those arising from acute infections.

Third: Those arising from trauma. Operative interference in the nose undoubtedly would cause a woeful number of cases were it not for the natural defenses provided in the nose and general system, which have been previously referred to. Careless and unskilful surgery have taken their toll of deaths from this affection. Nor is this to be wondered at, when one thinks of the comparatively thin shell of bone protecting the brain in this region, the opening up of the numerous channels of communication with the meninges, the possible breaking down of barriers around walled off infections and the introduction of fresh germs.

I have not mentioned at any length that form of meningitis produced by the meningococcus of Weishelbaum. This is not of such special interest to rhinologists as the other forms, for it produces very little pathology in the nose proper, which is mainly its culture field. It is of importance to us, however, in that we should be able to recognize it during epidemics and be prepared to guard

* Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 20th, 1916.

against the spread of the disease by culturing all suspicious cases. As this is the only means so far as known of its spread, it assumes a place of first importance.[11]

Fortunately the meningococcus is short-lived outside of its natural habitat, the nasopharynx.

Peters[12] classifies cerebrospinal fever into two types: First, those in whom the sphenoid sinuses are patent; Second, those in whom one or both sphenoid sinuses are closed. Those with patent sinuses appear to run a milder course, though in a series of cases in which all had pus in the sphenoid, opening of this sinus did not result in much improvement. According to Thomas, Fleming and Lundi,[13] there is always a primary invasion of streptococcus and these are always obtained from first cultures. It is also worth noting that while the disease may have three distinct stages—catarrhal, septicaemic and meningeal—it may stop at either of the first two, and the case may only present symptoms of pharyngitis and laryngitis, or it may go on to rather severe influenza symptoms. The pharynx and pillars in these cases are deep red, the veins prominent, and the uvula generally edematous.

In regard to the treatment of meningitis of nasal origin shall we operate in the presence of symptoms which lead us to believe the meninges are threatened (meningismus) or involved? There is some difference of opinion as to this. We know that recoveries have followed proper surgical drainage in meningitis of aural origin. It seems logical then to believe that, provided we operate fully and completely in such cases, we should look for some cures, as the conditions are analogous. I believe with Luc[14] that half interference is worse than none in such cases. He quotes, in his long monograph on the subject, several cases in which all the sinuses involved were operated, except the antrum, and blames the fatal results on failure to do this at the same time. Given a case of meningitis, not epidemic, due to infection within the nose, I would advocate a thorough removal of all diseased structures. Where the path of infection to the dura is to be seen, the bone should be removed in all directions until healthy dura is reached.

Spinal punctures give relief of headache in all forms of meningitis, and greatly hasten the disappearance of the serous form, which, however, always recovers whatever treatment or lack of treatment is used.

Antimeningococcic serums have been disappointing, but vaccines seem to have been distinctly an aid where used.[15] Soamin intravenously[16] and collargol[14] have been successful in some cases, apparently.

As the case stands at present, we can do more to prevent than to cure the disease. When operation for infection is indicated, let it be thorough. Avoid procedures which have been known to cause involvement of the meninges, such as electro-cauterization of the middle turbinates, opening up the channels of the diploë in the posterior wall of the frontal sinus by too vigorous curetting at operation.[17] Clean, skilful surgery resulting in thorough drainage is our chief reliance at the present time, both as a preventive and as, I believe, a therapeutic measure.

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ECTOPIC PREGNANCY WITH REPORT OF CASE.

By WM. F. JORDAN, M. D., Floriston, Cal.

The record of ectopic gestations in one of the leading eastern hospitals over a period of ten years, gives the astonishing information that less than 60% of these cases were diagnosed as such previous to operation. The mortality in unoperated cases is 68.8%, while in cases recognized early and promptly operated it is only 5%.

Here indeed is an opportunity to wipe out an unnecessary waste of human life, and it is the duty of every general practitioner (for it is to him that these cases first come for aid) to speed up in the early diagnosis of this condition and by prompt surgical measures save these patients from an untimely end.

Given the history in a case similar to the one recited below and any medical student ought to make the diagnosis, and yet in the minds of the profession there is much doubt and fear regarding this situation. Even among the teachers in the medical colleges one hears the subject lectured upon in such a solemn and fearful manner that he is apt to believe that he is on holy ground when approaching such a case, and it is but right and proper that he advance with fear and trembling. The readiness and certainty in the diagnosis of my first cases of extra-uterine pregnancies disillusioned me regarding the difficulty and exploded the false belief that this is a condition to be recognized only by the chosen few within the doors of large hospitals. The condition is not so rare but that it may happen in the practice of every doctor. That it is not recognized or at least suspected is in a measure due to failure of physicians to attach the importance deserved by the slight and transitory symptoms of the incipiency. In this respect the patients themselves commonly ignore the warning of what to them seems relatively an unimportant

matter, and certainly the condition presents no very alarming symptoms previous to rupture. The text books give the frequency of ectopic gestation as 1 in 500 to 1000 cases of pregnancy, and most of them are given to emphasis regarding a previous extended period of sterility. This is by no means an essential point in the history, although it seems uppermost in the minds of most men when considering a case. It will be noted in the present case that there has been rapid childbearing instead.

By the history alone the diagnosis is evident, certainly it will stand apart from other numerous and perplexing pelvic troubles and, together with positive vaginal signs, there can be no room for further doubt. The rupture will generally occur between the third and fifth week, although it may not happen until the twelfth week and exceptionally goes to full term. An ectopic pregnancy and its rupture may happen between the period for two regular menstruations. But are they normal menstruations?

They are not, and herein lies the key to the whole subject. There will be irregular bleeding with pelvic discomfort and sharp cutting pains, and feeling of faintness. These symptoms at first may be fleeting, with intervals when the woman will feel well, but they are sure to be repeated with an increase in duration and intensity, until the terrific and lancinating pain that is unbearable and accompanied by collapse and symptoms of internal hemorrhage, announces the occurrence of rupture. Here you have to deal now with a most critical situation. The submarine has shown her periscope on one or more occasions previously, but now she has launched the torpedo and it has found the mark. If the ship doesn't go down at once there is likely another and fatal shot awaiting her later. Such is the case with ruptured extra-uterine pregnancy, and while the primary hemorrhage may not be fatal, still it may be, and subsequent hemorrhage means great peril to the life of the patient.

In addition to the facts brought out in the history of these cases there may be the early signs and symptoms of a normal pregnancy with tenderness of the breast and morning sickness along with softening of the cervix, and careful examination will discover a tender tumor in the vaginal fornix. A positive Abderhalden test will establish the fact that you are dealing with a case in which there is a pregnancy, while the normal or slightly increased leucocytic count will exclude conditions of an inflammatory type. Altogether the modern doctor has at his instant command valuable means to aid in diagnosis of ectopic gestation, and there is slight excuse for failure to do. The history alone will be the most important factor in solving the question.

The following case will serve as a pen picture to illustrate the subject:

Multipara, age 29; nursing ninth baby, age 10 months. No abortions nor miscarriages, no record of past inflammatory pelvic disorder.

Menstruation began at 14, regular, of thirty-day type, duration of four days, using three napkins a day, always begins menstruating six months after parturition.

On May 22d had regular period, normal in duration and amount and on June 12th, while at supper table, felt a sudden sharp pain in right side of pelvis, which lasted only a short while but patient felt faint and weak, also noted a small flow of blood that night and following day. Otherwise felt well.

June 15th. While doing some light house work had a similar attack but of greater severity, and patient was compelled to lie down for several hours. There was a return of bleeding which soiled one napkin. The patient soon recovered again and felt well. Her husband suggested that he call in a doctor to which the woman would not consent and insisted that she would be all right.

June 22d. Began what she thought was a normal period. Had no pain but the flow lasted only two days and stopped.

June 25th. Returning home from a moving picture show had an attack of pain which was sharper and lasted longer than any previous attack, with the patient feeling very faint and weak. Shortly afterwards I visited the patient, who had somewhat recovered from the attack. Examination showed voluntary abdominal rigidity and right sided tenderness, skin moist, pulse 90, temperature normal. Bimanual examination showed slight uterine enlargement, marked tenderness in right vaginal fornix, with tubular enlargement of the outer end of fallopian tube.

Diagnosis.

Ectopic pregnancy, threatened rupture. Advised immediate operation; refused. Hypodermic morphia 1/6 gr., ice bag. At 2 o'clock in the morning was called again to see patient because of excruciating pain and found her in hemorrhagic shock. Pulse 130, rapid breathing, clammy skin, etc. Ruptured ectopic pregnancy. Hemorrhage soon stopped and pain controlled by additional morphine.

The following morning the patient's temperature was 99, pulse 92. Abdomen very tender, white blood count 10,000, red blood count 3,900,000, Haemoglobin 75. Vaginal examination showed exquisite tenderness on the right side and marked increase in size of tumor.

As the patient had not yet consented to being operated she was kept very quiet under the influence of morphia and ice to abdomen. The following day the patient was taken to the hospital and I operated her, assisted by Dr. J. B. Hardy. On opening the peritoneum a large quantity of blood escaped Fundus of uterus was seized and brought forward and clamp applied to broad ligament which quickly controlled all bleeding. The abdomen was cleansed of blood, the rupture tube removed. The appendix was next examined which disclosed a hardened tip and as the patient was in good condition, this too was removed. Recovery uneventful, patient left the hospital on the tenth day. The tubes showed no kinks or other malformation to act as a cause in the condition.

CONCLUSION.

The menstrual history, with the recurrence of the symptoms, regardless of positive vaginal findings, is the important feature in cases of ectopic pregnancy.

The tendency on the part of the patients to ignore the early symptoms and of the doctor to disregard their importance.

The classic history and symptoms, in conjunction with a tender tumor in vaginal fornix, makes an easy diagnosis and should never pass unrecognized. Early operation, previous to rupture with the consequent reduction in mortality.

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WILLIAM WATT KERR, M. B., C. M.

Born the 27th of June, 1857, in Edinburgh, Scotland. Died the 26th of April, 1917, in San Francisco.

Dr. Kerr was the seventh child of Andrew Kerr. architect, Her Majesty's Board of Works, Scotland, and Grace Watt Kerr, sister of William Watt, formerly Regent of the University of California, and of Robert Watt, formerly State Comptroller of California. He was educated in the Royal High School of Edinburgh and in Edinburgh University, taking his M. A. in 1877 and his C. M. and M. B. in 1881.

He came to live in San Francisco in December, 1881. He was married here to Miss Rowena Boobar in 1886. He is survived by his widow and by two brothers, Andrew Kerr of Edinburgh and James Kerr of San Francisco, and by three sisters.

He was a member of and had been President of the San Francisco County Medical Society, the Medical Society of the State of California and the California Academy of Medicine. He was a Fellow of the American Medical Association.

He became Professor of Therapeutics in the Medical Department of the University of California in 1887, and was changed to the Chair of Clinical Medicine in 1888, which position he held at the time of his death.

He was visiting physician to the City and County Hospital (now the San Francisco Hospital) and to the Children's Hospital. He was consulting physician to St. Luke's Hospital, the Maternity Hospital, San Francisco Lying-in Hospital and Foundling Asylum and Training School for Nursery Maids.

He was a member of the Presbyterian Church.

These are the formal statements of what Dr. Kerr did and was in the community of San Francisco and in the medical body politic, but there is something more to be said of the man we have known and with whom we have lived and worked and agreed and fought and whom we have loved.

All comments on his character by those who knew him longest and best refer back to the family of which he was one, and to his father and mother as the source and school of those qualities which made him what we found him to be. In that home he learned a religion, part of it—perhaps the minor part—related to a creed and a church; the rest was a very keen appreciation of what was right and wrong between man and man, and a steadfastness in following the right which never slackened. He showed this in his relations with others in his profession, and he showed it equally in his relations to his patients. He gave unto all their due and he demanded the same measure for himself. He had, of course, many warm friends who will always miss him, but the people who will miss him most are those who were his patients, in many homes and hospitals, to whom he always went, not merely as the technician to recognize and control diseased conditions, but as a friend with keen sympathy and just appreciation. This has been said by many such a one who has looked back over decades of his service and has recognized that it had finally ended and that the loss sustained by his death was a double one. As a physician he was the best type of the family physician, taking care of all conditions of all the members of a household unless a surgeon or a specialist was required, and even then he very properly selected the operator and kept closely in touch with all of the surgical phase. This gave him a very broad experience in a rich clinical field, and he took advantage of it and developed with the opportunity and became a most skillful physican and wise consultant.

In the profession Dr. Kerr was generally looked upon as a practitioner rather than as an investigator. Only a few know that his first intimation of the cardiac condition which finally caused his death came from his fainting in a hot bath at Sol Duc Springs in Washington. The fact and its import so impressed him that he sent for his brother to come up from San Francisco to be with him, and then he took a dozen more of the baths in order to study the phenomena which developed, even though each bath risked his life. His experience was made the occasion of a valuable paper read before the San Francisco County Medical Society, in which his personality as a subject was hidden behind a hypothetical patient. No man can give greater proof of his devotion to cause or to person than that he ventures his life for them—no other act can testify, as that does, to the inherited qualities and trained powers that have made the simple man great.

As a teacher of clinical medicine he ranked high, and a very large percentage of his students quote him rather than text books. It cannot be doubted for one instant but that he had a very great and a most healthy influence on the teaching of medicine in California during those decades of renaissance which have changed the didactic, proprietory schools to modern clinical laboratories. He did a great work on a very high plane and he leaves us an example which it will be hard for us adequately to follow.

Extract from a Sermon Preached by Rev. Frederick W. Clampett, in Trinity Church, San Francisco, on Sunday, April 29, 1917.

During the past week there has entered our lives a keen sense of personal loss in the death of a man of strong power in this community; the family physician, beloved and honored by so many of this congregation. He was, indeed, the good physician, a veritable tower of strength and an influence of a wholesome type, the range of which it would be impossible to estimate. In fact his passing out has been the inspiration of this ser-

mon, because the very qualities that made St. Stephen so strong belonged to him. He was loyal and courageous, and tender as a child. He had a deep, abiding faith in God, a strong religious nature ever living close to the Infinite. That he was brilliant and highly successful, in his profession, is known to all; but the source and fountain of that strength was the life hidden in God. The robust, strong nature of the Scotchman, frank and bright and filled with the real sunshine of true humor, we seemed to cling to him, as the ivy clings to the oak. There are so many of you, listening to me, this morning, to whom Dr. William Watt Kerr was a dear, personal friend. He was more than the physician; he was the family counsellor. He was brave to the end. With a mortal affliction, so well known to him that made certain the snapping of the vital thread at any moment, he went from home to home, administering to the sick, with all his might. He died in the very act of life's supreme duties. His, indeed, was a career of rare ability, but his kindness of heart seems to overmaster all else. Let me say, that in all the homes I have entered in this city, during a pastorate of almost eighteen years, no name was mentioned with more loving affection than that of Dr. Kerr. He ministered to almost every member of my family, and once he remained at the side of one of my children during an entire night, as she hovered between life and death. God bless and strengthen the brave woman who was his life companion, his angel as he loved to call her, the loving wife who watched over him and cared for him with so much tenderness.

EXPLANATION OF 1917 AMENDMENTS TO THE MEDICAL PRACTICE ACT.

Assembly Bill 1375 (Gebhart).

Effective after July 27, 1917.

No. 1. In Sec. 2, the annual meeting of the Board of Medical Examiners is changed from the second Tuesday of January to the third Monday in October. The place of meeting, Sacramento, is not changed.

No. 2. In Sec. 2, the language is changed so that the Board may publish and sell a directory, etc. Heretofore it seemed to be mandatory upon the Board. Also provides for an annual $2.00 tax for all licentiates and automatically suspends or revokes the certificate of those who do not pay the tax within 60 days after January 1st of each year. Such certificate, however, may be restored on payment of $10.00.

No. 3. Sec. 8 is amended to include the issuance of certificate to practice midwifery.

No. 4. Sec. 9 is amended to include the qualification of applicants for the future in the practice of midwifery.

No. 5. Sec. 10 is amended to include the subjects and minimum requirements of study for a certificate to practice midwifery.

No. 6. Sec. 11 is amended to list the subjects of examination for applicants to practice midwifery.

No. 7. The same section is amended to allow the use of an interpreter, selected by the Board, in an examination, the fee for same to be paid by the applicant.

No. 8. Sec. 12 is amended to give the officers of the United States Health Service the right of registration, the same as the regular United States Army or Navy medical officer. This is done at the request of Surgeon-General Blue of the United States Health Service.

No. 9. Sec. 12½ is amended to provide for the registration of the midwives already in practice in the State of California. It provides for a test of competency, proof of good moral character, etc., and a fee of $20.00.

This section also provides for an oral, practical or clinical examination for those holders of certificates "to practice osteopathy" issued under the laws of this state, who desire to qualify for a Physician's & Surgeon's certificate.

No. 10. Sec. 13 is amended to raise the fee for reciprocity applicants from $50.00 to $100.00. The reciprocity feature of the act necessitates the employment of investigators, clerks, etc., and it is necessary, therefore, to raise the fee.

No. 11. Sec. 14 of the act is amended to provide for the revocation of certificates to practice midwifery.

No. 12. Sec. 15 of the act is amended to strike out the word "other" which heretofore has resulted in placing an ambiguous construction upon the terms of the section.

No. 12½—

No. 13. Sec. 17 has been amended to include both physician or surgeon or practitioner—that is, the use of any term indicating that one is licensed to practice. In the same section the penalty clause is stricken out.

No. 14. The penalty clause has been stricken out of Sec. 18.

No. 15. A new section has been created designating the act as the State Medical Practice Act, and providing a penalty for the violation of the provisions of any portion thereof.

THE SAN DIEGO MEETING.

Due to the preparations of the Committee on Arrangements, the meeting at San Diego was a great success. Over four hundred names were inscribed in the register. The management of the Hotel del Coronado spared no effort to meet the requirements of the Society and its guests. Our thanks to them all.

THE PUBLICATION COMMITTEE.

The President has appointed the following Publication Committee for 1917-18: Alfred B. Grosse, William Palmer Lucas, Alfred Cummings Reed and George E. Tucker, all of San Francisco. The Editor is *ex-officio* chairman of the committee.

THE 1918 MEETING AT DEL MONTE.

The Society will meet at Del Monte next April. This delightful spot affords every comfort and pleasure, and at the same time is far enough away from any busy center to allow those attending the meeting to forget the trials and tribulations of active practice.

Book Reviews

"The Path of the Destroyer." A history of leprosy in the Hawaiian Islands and 30 years' research into the means by which it has been spread. By A. A. St. Moritz. Honolulu, 1916.

This is a curious medley of things Hawaiian; it contains considerable matter concerning leprosy

in the Islands,—not much that is of strictly medical interest, but a mass of reports from the Leper Settlement on Molokai, statistics and personal gossip. One especially interested in leprosy may find sufficient in the book to hold his attention. L. E.

The Newer Methods of Blood and Urine Chemistry. By R. B. H. Gradwohl and A. J. Blaivas, St. Louis: Mosby. 1917.

The appearance of this laboratory manual is very opportune when metabolic chemistry is coming to be recognized as a very important clinical aid in diagnosis and prognosis. The authors give in detail the technic of one method for each test which they, in their experience, have found most useful and accurate. Minute instructions as to setting up apparatus, making standard solutions, etc., are given as well as examples of the calculations necessary in arriving at a reading.

About thirty-five pages are given over to general and microscopic urine analysis. The physiologic and pathologic conditions giving rise to each kind of urinary crystal are given and forms an interesting feature of the book.

The four chapters on blood chemistry go slightly into the physiology concerned, and a few case histories serve to illustrate certain points. An ample footnote bibliography enables one to look up any subject of particular interest. J. M. R.

General Medicine. Vol. 1 of Practical Medicine Series 1917. Edited by Frank Billings, assisted by B. O. Raulston. Chicago: The Yearbook Publishers. 1917. Price $1.50.

Contents.

Research work, experimental medicine and laboratory technic. Infectious diseases. Diseases of the chest. Diseases of the heart. Diseases of the blood vessels. Diseases of the blood and blood-making organs. Diseases of the ductless glands. Diseases of metabolism. Diseases of the kidneys. Poisoning.

Medical Clinics of Chicago. Volume II, Number V (March 1917). Octavo. Philadelphia and London: W. B. Saunders Company. 1917. Published bi-monthly. Price per year: Paper, $8.00; cloth $12.00.

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  Diagnosis and treatment of chronic constipation.

The Medical Clinics of Chicago. Volume II, Number IV (January 1917). Octavo of 231 pages, 20 illustrations. Philadelphia and London: W. B. Saunders Company. 1917. Published Bimonthly. Price per year: Paper, $8.00; Cloth, $12.00.

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Clinic of Dr. Arthur F. Beifeld.
  Purpura haemorrhagica (Werlhof's disease).

A Manual of Nervous Diseases. By Irving J. Spear, M. D., Professor of Neurology at the University of Maryland, Baltimore. 12 mo of 660 pages with 169 illustrations. Philadelphia and London: W. B. Saunders Company. 1916. Cloth, $2.75 net.

This little volume of 660 pages is intended for the general practitioner of medicine and the student.

The author regards the study of diseases of the nervous system as particularly difficult because of a lack of proper understanding of the anatomy and physiology of the nervous system. This lack, the author endeavors to overcome in this work.

The subject matter is divided under the headings of: anatomy and physiology of the nervous system, examination of the patient, diseases of the peripheral nerves, diseases of the muscular system, diseases of the spinal cord, diseases of the brain, diseases of the brain and pinal cord, diseases of the nervous system without pathologic findings, neuroses characterized by spasmodic muscle contractions, diseases due to perversion of secretion of the ductless glands, diseases due to disturbance of the vasomotor system, trophoneuroses, and unclassified disorders.

The book is profusely illustrated with many original photographs. The chapters on the sympathetic nervous system and diseases of the endocrine glands are concise and clear.

In general, it may be said that the subject matter is up-to-date and that the consideration of the diseases treated is as complete as can be expected in a volume of this size. W. F. S.

A Treatise on Diseases of the Skin. For the use of advanced Students and Practitioners. By Henry Stelwagon, M. D., Ph. D., Professor of Dermatology, Jefferson Medical College, Philadelphia. Eighth edition, thoroughly revised. Octavo of 1309 pages, with 356 text-illustrations, and 33 full-page colored and half-tone plates. Philadelphia and London: W. B. Saunders Company. 1916. Cloth, $6.50 net; Half Morocco, $8.00 net.

This well known text and reference book, editions of which in the past few years have not been strictly up to date, has been greatly improved in its eighth edition. It is earnestly hoped that future revisions will see continued improvement in this direction. The book has long been most widely used in English speaking countries and is one of great value to medical students and practitioners. H.E. V.

Text-Book of Ophthalmology. By Hofrat Ernst Fuchs. Authorized translation from twelfth German edition; revised, with additions, etc., by Alexander Duane. 462 illustrations. Fifth edition. Philadelphia and London: J. B. Lippincott Company. 1917. Price, $7.00.

Any reviewer will approach this book with a feeling of reverence. He expects to find the clearest description of disease, the most concise reasoning, the most illuminating insight, the most literary medical phraseology—and he is not disappointed. The book is a classic in ophthalmology, as Billroth was in surgery, Virchow in pathology and Foster in physiology. In its translation Duane has accomplished wonders. As nearly as any translation can, it gives the spirit of the original.

In this edition Duane has been more than translater. Nearly every page finds some comment in small type distinguished by the letter D consisting of some statement regarding new facts on the subject or some new theory concerning it. By these means, Duane has brought the book up to date. Not only that, but he has supplied some entirely new material which may be mentioned: the remarks on tuberculin and vaccine therapy, the visual field and color testing, the mapping of scotomata and the blind spot, squirrel plague and eel's blood conjunctivitis, Samoan conjunctivitis, peculiarities of conjunctivitis in the Near East, extragenital gonococcus infection, inclusion blennorrhoea, the etiology of trachoma, blastomycetic dermatitis, superficial linear keratis, sclerosis of the chorioid, suppurative chorioditis, Elliot's summary of glaucoma theories, retinitis stellata, retinitis exudativa, and angiomatosis retinae, the different forms of retinal degeneration, the varieties of accommodative troubles other than paralysis, and the newer operations.

The section on refraction is in many respects the clearest to be found in any text-book on the subject although it fills only a small part of the whole volume. As in the older editions the pathology is beautifully described and illustrated. The translater has made a somewhat different arrangement by placing the remarks in fine print, which were massed as an appendix at the end of chapters or major divisions, in direct juxtaposition to the portion of the text with which it is related. The changes had the approval of the author. It may be only that as the old edition was, and is, our "Bible of Ophthalmology," the present arrangement does not seem as satisfactory.

To any student of ophthalmology, in fact, to any medical man, the possession of this book is a literary, as well as a medical necessity. Other books are nice to have occasionally. Of this one, one should have three copies; one in the office, one in one's library, one at the bedside—the doctor's bedside, of course. H. B.

Fats and Fatty Degeneration. Martin H. Fischer and Marian O. Hooker. New York. John Wiley & Sons, 1917.

This treatise of Fischer's on "Fats and Fatty Degeneration," shows all the good features of his previous publications developed to a high degree and naturally also suffers from similar defects. The book makes very interesting reading and presents much that is old from a refreshingly novel point of view. The technical part of the presentation is well nigh perfect. The preliminary summary and the later more amplified development of the subject are masterfully done. The illustrations are well chosen and convincing and in this effort at "morphological" perfection Dr. Fischer has been ably seconded by his publishers. "Functionally" and essentially his contributions in this work are by no means negligible. It is hardly to be imagined that the author really believes that he gives an entirely new theory of emulsions, because he uses old theories freely and abandons his own when necessary, f. i. in the case of "stretched" emulsions. His biological references when dealing with the effect of ether, chloroform and alcohol on certain emulsions are interesting, but can hardly be looked upon as more than "suggestive." His conception of fatty degeneration as the breaking of an emulsion of fat in protoplasm is a very ingenious one. That the fat, however, in the first place, is present in the form of an emulsion remains to be proved, because the fact that at present we cannot explain it in any other way, is no proof of this contention. I have also slight misgiving in reference to the author's positive statement that subcutaneous fat represents a water in fat emulsion because there are certain patent physical differences between this form of fat and such substances as butter, and morphologically the inclusion of water cannot always be proved. Nor can I see that Fischer's exposition adds as much to our knowledge of the mechanism of fatty secretions as seems to be implied by the author. If artificial milks have not as yet been prepared according to his receipe he has discovered a veritable egg of Columbus.

The two chapters "On the Mimicry of Mucoid Secretion" and "On the Mimicry of Some Anatomical Structures" are hardly germane to the main subject and merely serve as examples of Dr. Fischer's unfortunate inclination for generalizations on rather slender premises which also makes itself rather harshly felt in spots in his concluding paragraphs.

In order to avoid misunderstanding, however, I wish to add that especially for the well informed, the careful study of Dr. Fischer's book is very profitable and distinctly stimulating. W. O.

Society Reports

MEETING OF THE EYE AND EAR SECTION.

The regular meeting of the eye and ear section, Los Angeles County Medical Association, was held at the offices of Drs. Frank Miller and Frank Edwards, 1020 Merchants National Bank Building, Los Angeles, Cal., April 9, 1917.

Attendance: Drs. Ballard, Brown, Dudley, Detling, Fleming, Graham, Ide, Kress, Lund, T. J. McCoy, Geo. W. McCoy, F. W. Miller, F. V. Miller, Old, Stivers, Swetnam, McKellar.

Visitors: Drs. Ross Moore, R. B. Hill, Jesberg, and Edwards.

Adjourned Meeting of April 2.

Minutes of previous meeting read and approved.

Dr. Old presented a case of foreign body in the left eye. Rivet piece located in vitreous, did not feel the injury except impact.? Steel located by X-rays. Can piece be removed by magnet?

Dr. R. W. Miller: Think it can be removed by magnet unless buried in soft tunics.

Dr. Rogers: Had a similar case, steel size of pin

carried three weeks. Inflammation symptoms, steel removed by seleral puncture and magnet. Another specimen carried three weeks removed similarly; both eyes saved; both these cases cataractous lenses; one case died.

Dr. Rogers: Case man injured March 1st by piece of steel while doing work on a dredger. Steel penetrated cornea, tore lower one-half iris loose from attachment penetrated vitreous which escaped. Not suffering severely, cut iris loose, replaced; irrigated eye, put patient to bed; stayed five days; used atropin freely; dressed second day; found eye ball firm; corneal wound united, now five weeks; first two weeks no inflammation but now lens substance oozing out upper edge of iris; today is quite a mass. Used trichloracetic acid in ulcer; still some inflammation; X-ray pictures now show no foreign body. Question: Whether to open eye now and wash lens matter out. Man is 37; other eye is bad; far sight is poor.

Dr. Rogers: Second case.

Dr. Rogers: Third case. Seen with Dr. McKellar. End of clothes line struck her in the eye, became blind few days later. Examined eye but saw no evidence of pain; dilated pupil but pain was still severe. Pain grew worse. Dr. McKellar called in consultation we agreed it was deeper in the eye or else nervous manifestation of hysteria. Neurologist gave his opinion that it was hysteria. Tested with red and white lights. Recovered sight the next day as I had predicted.

Dr. Bullard: Had similar case cured by Princes method.

Program.

General Consideration of Meningitis. Dr. Ross Moore.

Management of Meningitis of Otitic Origin. Dr. C. E. Ide.

Bacteriology and Pathology of Meningitis. Dr. R. B. Hill.

Discussion.

Dr. Hastings: It is a perennial question. It does not seem we have progressed much in the past ten or fifteen years. I will limit my discussion to acute meningitis of otitic origin. Do not see as much menigitis now as formerly because cases now are not operated so early. When I first began my practice fifteen years ago it was the custom to operate early. In an experience of perhaps 100 cases, saw 20 per cent. in which there was no microscopic findings such as pus or abscess, found granulations so called. Point to be made is early mastoid operation does not prevent meningitis. There are many cases of acute otitis media developing meningitis and die.

Pneumonia not a local lung infection but part of a general septicaemia. Must remember that a mastoid case may have pneumonia and to operate on such a mastoid with the hope of eradicating the pus focus would seriously endanger the life of the patient, many cases now have pneumonia without any coarse lesions in lungs, must remember that in these cases little hope is to be found in operating the mastoid.

Dr. Brown: Dr. Stork in consultation said child had meningitis-spinal puncture, showed streptococci. On account of pain in front of ear again operated and carried incision in front of ear exposing dura. Both ears showed streptococci and both recovered.

Dr. Bullard: It is easy to give nitrous oxygen anesthesia in these cases. Patients come out easily without developing pneumonia so often seen in ether.

Dr. Kyle: Do not believe that opening mastoid disposes to meningitis. Meningitis developes before and not after mastoid operation. Think we make mistake by proscrastinating too long in a well developed mastoiditis. We do not have many cases meningitis purulenta. I mean to have serious inflammation but they go on to recovery. Meningismus is a very rare condition. Skeptical about operating on a case where spinal fluid shows streptococci. Never saw a case get well in which the spinal fluid contained streptococci.

Dr. Fleming: Can not add much to this discussion. Never had a case that recovered. My cases all developed very rapidly in three or four days and died in seven days. Would first do lumbar puncture and if streptococci are found would hesitate about operating the mastoid. Have never seen a case of meningitis developing from chronic otorrhoea. All have been acute cases.

Dr. Rogers: Surprised to hear Dr. Fleming say he never saw acute mastoid develop from chronic discharging ear.

Dr. Fleming: Dr. Rogers misunderstood me. "I said I never saw acute meningitis develop from otorrhoea."

Dr. Fleming: Have seen two cases in past eighteen months, one developed brain abscess and died. One operated in six hours afterward became comatose. Death followed. Other case woman, meningitis. Patient fell down in her kitchen, operated, died.

Dr. Hastings: Haynes method tried out but abandoned.

Crocket has lately been doing a decompression and spinal puncture.

Mackewen Smith says when spinal fluid shows streptococci in culture has never seen such cases get well.

Urotropin no good in alkaline medium.

Vaccines no good.

Crocket will do two or three spinal punctures a day keeping down the pressure and patient's resistance increases and he gets well.

Dr. Brown: Alexander of Vienna finds most of these meningitis are metastatic and never been able to find a path of invasion. If you have a meningitis complicating a mastoiditis, I think you should drain the mastoid in spite of the meningitis. In the early fulminating cases I would not think operation would help.

Dr. Montgomery reports a case streptococcic infection of spinal fluid with recovery.

Two cases: First, baby seven months old, earache of three days duration, distinct Kernig's sign. Clinical signs of meninigitis and of an acute mastoid were present. Parents asked me to operate. Did so and found pus. Spinal puncture at close of operation showed fluid under pressure. Drs. Black and Betten examined fluid showed streptococci. Recovery followed.

Second case, boy, nine years of age. Swelling behind and over ears, discharge from ear. Temperature 103. Simple mastoidectomy by Dr. Swetnam; did well for three weeks when began to vomit and other symptoms of meningitis.

Discussion.

Dr. R. W. Miller: Have some cases which undoubtedly must be regarded as general infection. Recall one case, tonsil and adenoid operation developed later middle ear inflammation. Double mastoid showed pus both sides. Patient remained septic and died.

Second case. Young woman developed tonsillitis, adenitis, etc. Died of meningitis.

Dr. Ross Moore (in closing): My experience evidently did not arrive judging from scanty discussion. Reflexes differ widely between normal and pathological. Also in the early and late stages of meningitis.

Dr. Hill: I feel as Dr. Hastings does, when meningitis is present nothing more to do. Main thing is the diagnosis by examination of the spinal fluid.

In sixty-three cases examined in 1913 sixty died, three recovered, one of influenza.

Dr. Fleming: Would not care to go on record as thinking that all chronic running ears do not develop meningitis. What I meant was in my experience they have never developed a simple

meningitis. There have been abscess or sinus thrombosis developed.

Dr. Ide: Appreciate Dr. Moore's remarks about reflexes, etc. Decompression can be done without opening mastoid, can go through the squamous plate of temporal bone.

Dr. Miller: Dr. Moore shot over our heads. We feel very grateful to him. Will test reflexes more frequently and accurately also.

On motion of Dr. Miller, the section voted thanks to Drs. Ide, Moore and Hill.

The meeting adjourned.

C. G. STIVERS, M. D.,
Secretary.

SACRAMENTO COUNTY.

The regular monthly meeting of the Sacramento Society for Medical Improvement was held at the Hotel Sacramento, Tuesday evening, April 24. President Dr. C. P. Jones in the chair.

The minutes of the previous regular meeting were read and approved.

The paper of the evening on "The Water Problem of Sacramento," was read by Dr. A. W. Sawyer, Secretary of the State Board of Health.

Discussion opened by Dr. Charles Gilman Hyde, of the University of California, followed by Mr. F. C. Miller, City Engineer of Sacramento, Dr. James H. Parkinson, Dr. T. W. Huntington of San Francisco, Dr. A. M. Henderson, and Dr. W. E. Briggs.

Discussion closed by Dr Sawyer and Dr. Hyde.

Dr. Albert F. Welin of Rio Vista, was elected to membership.

At the luncheon following the meeting, Dr. Thomas W. Huntington of San Francisco, delivered an address on the Officers' Reserve Corps, United States Army, as it applied to the medical profession.

W. A. BEATTIE, Secretary.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the residence of Dr. J. T. Davison, Friday evening, April 27. Those present were: Drs. J. D. Dameron, B. J. Powell, R. B. Knight, H. F. Sanderson, Minerva Goodman, H. C. Petersen, Hudson Smythe, J. V. Craviotto, R. R. Hammond, I. S. Zeimer, W. F. Priestly, H. J. Bolinger, E. B. Todd, J. T. Davison, E. A. Arthur, C. F. English, C. R. Harry, N. E. Williamson, A. H. Heppner,, and L. Dozier, with Dr. McCloskey of the State Hospital and Dr. Thos. W. Huntington of the Medical Board of the National Council of Defense as guests.

The reports of the delegates to the State convention being of minor importance, the floor was given to Dr. Huntington who gave an outline of the work of the Council of National Defense with his talk often interspersed with the doctor's natural eloquence and remarkable choice of diction.

Dr. Huntington had just returned from Washington as the Pacific Coast medical representative and was able to give an authoritative and illuminating talk on the situation as he found it at the national capitol. He told of the seriousness of the situation which the American nation had to face and appealed to the medical men to do their share in co-operating in the service which all must render to their country at this time.

Following the address of Dr. Huntington, a social hour was enjoyed.

DEWEY R. POWELL,
Secretary.

SANTA BARBARA COUNTY.

The Santa Barbara County Medical Society met April 9th at the Chamber of Commerce rooms, where they listened to an intensely interesting paper on "The Value of Blood Pressure in Medicine," by Dr. Horace F. Pierce.

Applications for membership were received from three individuals, namely, Dr. C. N. Bell, Dr. J. C. Cummings, and Dr. F. H. Lay.

Very truly,

R. M. CLARKE, M. D., Secretary.

DEPARTMENT OF BACTERIOLOGY AND PATHOLOGY.

Edited by BENJAMIN JABLONS, M. D., San Francisco.

[This department has as its chief object the dissemination of the special knowledge that is being developed in the scientific laboratories of the world, and which are of practical interest to the medical practitioner. Abstracts of general articles will be published from time to time as well as preliminary reports of subjects that are of universal interest.]

JOURNAL OF MEDICAL RESEARCH. JANUARY, 1917.

Hall and Harvey conclude as a result of their extensive studies on forty-three patients suffering from pulmonary tuberculosis that the blood cultures fail to give positive findings even where secondary infection of the sputum is present. Out of fifty-two blood cultures but two were positive. Both were advanced cases, "open" and febrile. Despite the presence of secondary infection of the cavities it was possible to demonstrate but rarely a secondary bacteremia.

In addition they have found by a modification of the Koch-Kitasato method of isolating secondary micro-organisms of the sputum by repeated washings, that the most frequent invader present in association with pulmonary tuberculosis is the Streptococcus Non-hemolyticus.

Weston found that the Hydrogenion concentration of the spinal fluid varied little in the different psychoses and differed but little from the figures obtained by Hurwitz and Tranter in normal and syphilitic cases.

PROCEEDINGS OF THE SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE. 1915-1916.

Uric Acid, Urea and Creatinine in the Blood of Early and Late Nephritis;—Myers, Fine and Lough have determined as a result of the study of the Nitrogen partitions of the blood and urine that changes in the permeability of the kidney is followed by definite changes in the non-protein nitrogen group.

As the permeability of the kidney is lowered it becomes evident in the blood, first by an increase in the uric acid, second by an increase in the Urea and lastly by that of Creatinine. The early cases of interstitial nephritis give blood pictures that differ little from those of gout with regard to their high uric acid findings. The Urea varies, however, from slightly above to more than double the normal amount. When the latter condition is present the differential diagnosis between Gout and Interstitial Nephritis is rendered less difficult.

With increasing severity of the kidney condition the urea retention correspondingly increases. If improvement takes place the blood urea concentration gradually falls, although the uric acid percentage may remain high.

If the case goes on to a fatal termination the retention of uric acid and urea is followed by that of creatinin, the concentration of which may reach twenty times the normal. The phenolphthalein output then becomes practically zero.

Foster has found a toxic substance from blood in cases of toxic uremia. This toxic substance can be recovered in 200 cc. of uremic blood and will cause the death of a guinea pig. Control analysis of bloods from a wide variety of conditions not associated with uremia failed to discover a similar substance.

A. A. Epstein maintains it is erroneous to draw conclusions from the sugar concentration of the

blood without taking into consideration the variation in the blood volume.

This can be determined by means of the hematocrit without resorting to the use of any other complicated method.

A definite mathematical relation exists between the percentage of sugar in the urine and that of the blood. This applies only to individuals with the normal functioning kidneys. In those with defective kidneys the hyperglycemia is usually greater in proportion to the glycosuria. The total content may similarly increase and the percentage remain constant owing to an associated increase in the total volume of the blood, which measures the total blood volume.

Establishing the changes that occur in the proportion of the cells in the blood from time to time permits of computations of the alteration in the blood volume. The percentage of sugar may rise or fall as a result of a change in the volume of the blood caused by bleeding, anaesthesia, sweating or ingestion of fluid without the total content being in any way affected.

The total content may similarly increase and the percentage remain constant owing to an associated increase in the total volume of the blood. It is therefore necessary to make frequent estimations of the blood sugar to properly interpret the findings. Diuresis in Diabetes Mellitus plays an important role in determining the amount of sugar eliminated by the kidneys.

Diabetic Dietetics.—Janney and Czonka have determined the amount of glucose that various meats may yield by means of experiments upon phlorizinized animals. They have found that uncooked beef, chicken, chicken eggs, rabbit and fish yielded 9 to 12 per cent. of sugar. The solid substances of these materials produced from 36 to 48 per cent. glucose. Broiling and frying lead to considerable loss of water with corresponding increase of the percentage of glucose formation. Broiled beefsteak would yield 17.5 per cent. glucose. Flour gives rise to 92.5 per cent. of sugar calculated on an anhydrous basis.

They compute that 100 gm. of bread is equivalent to about 350 gm. of broiled beefsteak. In formulating diets for diabetics it is well to consider the glucose formation that may be derived from protein.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Rosenow and v. Hess in investigating a severe epidemic of sore throat that occurred in Galesville, Wis., found an etiologic relationship between the streptococcus isolated from the throats of patients and that of milk that was derived from cows suffering from a mastitis. The disease occurred almost exclusively in patients that had consumed the milk. The streptococcus was found in enormous numbers in the material derived by stripping the udders of cows suffering from mastitis as well as those derived from some apparently normal cows. These streptococci were found to be highly virulent in animals and in one monkey produced a typical erysipelas after scratching with a wire that had been dipped into the infected material.

Swabbing the throat with cotton dipped in this milk produced an acute inflammation of the throat with acute enlargement of the lymph glands of the neck.

Heating the milk to sixty degrees for twenty minutes render the material innocuous. Rosenow and v. Hess conclude therefore that virulent bacteria may be present without any demonstrable sign of disease in the udder, and since it is impossible to avoid contamination of the milk in handling, it is important that universal pasteurization of milk be adopted.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

(Devoted to the advancement of Pharmacy and its allied branches; to the work of the Council on Pharmacy and Chemistry of the American Medical Association, and to matters of interest bearing upon therapeutic agents offered to the medical profession. The editor will gladly supply available information on subjects coming within the scope of this Department.)

NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Nonofficial Remedies, 1917, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Ferric Cacodylate; Iron Cacodylate.—A ferric salt of cacodylic acid containing from 39.7 to 44.9 per cent. arsenic (As). A grayish-brown powder, soluble in water. The use of ferric cacodylate has been proposed in cases where the effects of iron salts and the mild arsenic effect of cacodylates is desired. Dosage: From 0.015 to 0.1 Gm.

Ampules Iron Cacodylate-Mulford, 0.03 Gm.—Each ampule contains ferric cacodylate 0.03 Gm.—in 1 Cc. solution. The H. K. Mulford Co., Philadelphia.

Ampules Iron Cacodylate-Squibb, 0.03 Gm.—Each ampule contains ferric cacodylate 0.03 Gm. in 1 Cc. solution. E. R. Squibb & Sons, New York City (Jour. A. M. A., April 7, 1917, p. 1043).

Acetylsalicylic Acid-Squibb.—A non-proprietary brand of acetylsalicylic acid complying with the standards of New and Non-Official Remedies. E. R. Squibb & Sons, New York City.

Aspirin, L. & F.—A non-proprietary brand of acetylsalicylic acid complying with the standards of New and Non-Official Remedies. Lehn & Fink, New York City (Jour. A. M. A., April 28, 1917, p. 1261).

Ambrine.—Ambrine is a French, secret preparation that has been on the market for many years. It has recently come into prominence through sensational articles in the lay press. For all practical purposes it is solid paraffin to which some material has been added to make it adhesive and more plastic. For use it is heated until liquid and then applied to open wounds and burns, forming a relatively impervious dressing (Jour. A. M. A., April 7, 1917, p. 1057).

Paraffin Films.—The popular propaganda for "Ambrine" having brought the paraffin film treatment of burns into prominence, Torald Sollmann has instituted experiments to devise a suitable, open formula preparation which is simple and yet meets all requirements. He suggests that surgeons who desire to experiment with the paraffin treatment of burns use simple preparations of known composition. Ordinary paraffin melting at about 50 C. (122 F.) appears to possess practically the mechanical properties of "Ambrine." A mixture containing some asphaltum (asphalt varnish, Trinidad or Bermudez, "asphalt cement" and Texas asphalt were tried) gives a preparation of superior pliability. Other formulas are given and their trial suggested (Jour. A. M. A., April 7, 1917, p. 1037).

Cyanocuprol.—Studies of the effects of "cyanocuprol" on tuberculous processes, carried out by Japanese investigators, have been published. "Cyanocuprol" is stated to be a copper cyanid preparation, the exact composition of which is being kept secret. Even if its identity should become known, the use of "cyanocuprol" is decidedly in the experimental stage (Jour. A. M. A., April 7, 1917, p. 1057).

Corpora Lutea (Soluble Extract).—The Council on Pharmacy and Chemistry reports that "Corpora Lutea (Soluble Extract)," marketed by Parke, Davis

& Co. in the form of ampules for hypodermic administration, is ineligible for admission to New and Nonofficial Remedies, because it is a secret preparation advertised under extravagant claims. No statement of composition is made beyond the indefinite claim that it is an aqueous solution of "soluble Corpora Lutea Extract," each ampule corresponding to 0.2 Gm. desiccated gland. How these soluble products are obtained, whether they represent all the water-soluble principles, or whether some have been eliminated, is not stated. The claims made for the action and uses of the preparation do not make clear the essentially experimental status of the article, and are therefore misleading. Further, the use of this extract is advised not only in functional amenorrhea and the ordinary reflex consequences of physiologic or artificial menopause, but also in conditions where the expectation of benefit cannot possibly be fulfilled (Jour. A. M. A., April 7, 1917, p. 1056).

Pharmacology of Stovaine.—M. I. Smith and R. A. Hatcher find that in toxic doses stovaine produces death in animals by inducing immediate and simultaneous paralysis of the heart and the respiration, the action on each being independent of the other. They find that stovaine disappears rapidly from the blood stream after its intravenous injection. Stovaine is slightly more toxic than novocaine by similar modes of administration and complete recovery does not follow the administration of toxic doses of stovaine so promptly as it does with corresponding doses of novocaine (Jour. Pharm. and Exp. Thera., Jan., 1917, p. 231).

Piperazin and Other Organic Urate Solvents.—From a review of the literature P. J. Hanzlik concludes: there is no reliable evidence to show that piperazin, in small or therapeutic doses, imparts to urine, urate solvent qualities, either by direct addition or after excretion; excessive doses produce a slight but negligible increase in uric acid excretion, the same being effectively produced by sodium bicarbonate or sodium citrate; there is no reliable evidence to indicate that piperazin can remove or prevent urate deposits; diuresis is uninfluenced by even large doses of piperazin and its administration does not materially reduce the acidity of the urine; scientific evidence, though limited, and clinical opinion indicate that piperazin is valueless in gout. Hanzlik also reports that there is sufficient evidence to indicate the worthlessness of the following as urate solvents: quinic acid, quinoline, colchicum, piperidin, Urosin, Lycetol, Sidonal, Lysidin and Urol (Jour. Lab. and Clin. Med., Feb., 1917, p. 308).

Citric Acid and Citrates.—Citric acid and the alkali citrates, potassium citrate and sodium citrate, are oxidized in the body with formation of carbonates and hence tend to increase the alkalinity of the blood. Citric acid and the alkali citrates tend to render the urine less acid and, in large doses, render it alkaline (Jour. A. M. A., April 21, 1917, p. 1206).

Hexamethylenamin in Pyelitis.—I. A. Abt advises caution in the administration of hexamethylenamin in the pyelitis of infants. It should be under continuous observation and its use should be continued for an extended period. The urine should be frequently examined for blood. Abt has more than once seen cases of fatal nephritis which he believes due to the overuse of hexamethylenamin. He advises that, if given to infants under one year of age, it should be given in one grain doses followed by water. This dose may be repeated four or five times daily (Jour. A. M. A., April 14, 1917, p. 1100).

The Luetin Test.—Confirmatory of previous investigations, H. N. Cole and H. V. Parysek find that some non-syphilities respond positively to the luetin test and that in those non-syphilities who do not respond spontaneously the reaction can generally be provoked by iodides. They also demonstrated that the reaction may be provoked by potassium nitrate and potassium bromide. Proving that the potassium ion in the potassium iodide and bromide was not concerned in the reaction, they found that the luetin test may be provoked by sodium bromide, sodium iodide and calcium bromide (Jour. A. M. A., April 14, 1917, p. 1089).

Abolition of the Salvarsan Patent.—The Chicago Medical Society and the St. Louis Medical Society urge the abolition of the Salvarsan patent. The patent should be abrogated, not only because the patentees have not supplied the demand, not alone because they have dictated to the medical profession who should have the drug and how much a physician might have, not alone because of the war with Germany, not alone because of the special needs of the government at this time for the control of venereal diseases, not alone because, as some claim, the patent at Washington does not correctly describe the product, but also because the people who are supplying this product are charging prices that are exorbitant. In order that a sufficient supply, to control the ravages of one of the most serious diseases that afflict humanity, may be assured, it is the duty of Congress to abrogate the Salvarsan patent (Jour. A. M. A., April 31, 1917, p. 1187 and 1203).

Pepsodent.—Wm. J. Gies writes that Pepsodent is a dentifrice widely advertised as a mucin digestant. In a research conducted for the First District Dental Society of the State of New York, Professor Gies and Miss Franke found that the digestive claims were not warranted in any degree. Gies holds that there is about as much common sense in the proposed use of Pepsodent for this purpose as there is in the oral administration of a few grains of Lactopeptine to improve impaired tryptic digestion in the intestines (Jour. A. M. A., April 28, 1917, p. 1278).

Sterling Violet Ray Generator.—This is a small frequency apparatus with some vacuum and possibly other electrodes. The apparatus is not one for producing violet or ultra-violet rays in the scientific meaning of those words. The apparatus will not do the things claimed for it in the advertising booklet which includes the treatment of practically every ailment known to mankind (Jour. A. M. A., April 14, 1917, p. 1141).

PRELIMINARY PROGRAM, AMERICAN PROCTOLOGIC SOCIETY.

Nineteenth annual meeting, New York City, N. Y., June 4th and 5th, 1917. Place of meeting, Hotel Astor. The profession is cordially invited to attend all meetings.

Program, Commencing June 4, 1917.

Executive Council meets at 8 A. M., First regular session at 9 A. M.

Annual address by the President.

"The Place of the Proctologist in a Diagnostic Group."

Alfred I. Zobel, San Francisco, Cal.

Memorial Address—"Our Late Member, George J. Cook, Indianapolis, Ind."

Alois B. Graham, Indianapolis, Ind.

Papers.

1. Adult Rectal Prolapse; Two Cases and a Contrast—Ralph W. Jackson, Fall River, Mass.

2. Adenomyoma of the Rectum—Frank C. Yeomans, New York City, N. Y.

3. Summary Reports of Nine Cases of Peri-Colic Membrane—John L. Jelks, Memphis, Tenn.

4. Should the Sphincters be Divided?—Rollin H. Barnes, St. Louis, Mo.

5. Neglected Rectal Examination—James A. McVeigh, Detroit, Mich.

6. Enemas and Colonic Flushing as Etiologic

Factors in Appendicitis—William H. Stauffer, St. Louis, Mo.

7. The Relationship of Hemorrhoidal Disease to the Health Balance—William M. Beach, Pittsburg, Pa.

8. The Underlying Factors of the Clamp and Cautery Operation for Internal Piles—W. Oakley Hermance, Philadelphia, Pa.

9. The Pathology of Hemorrhoids—J. Coles Brick, Philadelphia, Pa.

10. Report of a Case of Idiosyncracy to Quinine and Urea Hydrochloride—Collier F. Martin, Philadelphia, Pa.

11. Neoproctology.—A Glimpse into the Future—Jerome M. Lynch, New York City, N. Y.

12. The Post-Operative Factor in Rectal Surgery—Barney J. Dreyfuss, New York City, N. Y.

13. The Non-Surgical Treatment of Splanchnoptosis—Rolla Camden, Parkersburg, W. Va.

Rectal Clinics will be held by Drs. Samuel G. Gant and Jerome M. Lynch. The hour and place will be announced later.

ERRATUM.

In the May issue 1917 of the Journal, page 180, the name Richard H. Endicott, Oakland, should read Richard Henry Endicott, Oakdale, Cal.

THE PREPAREDNESS LEAGUE OF AMERICAN DENTISTS.

In San Francisco dentists have formed a unit of the Preparedness League of American Dentists. Weekly meetings are being held and the members are perfecting themselves in dental surgery applicable to war service. A number of men have already passed the physical and theoretical examination and have been accepted into the Dental Reserve Corps of the U. S. Army. A large number have agreed to put in order the mouths of those recruits who need dental attention before enlistment as may be assigned to them. It is the intention to form study-clubs at certain hospitals to gain experience in surgical work about the face and jaws. The state dentists also are being organized to render what service they can.

NEW MEMBERS.

Johnson, Clarence A., Los Angeles.
Lettice, Fred. E., Los Angeles.
Newcomer, Paul W., Pomona.
Snure, Henry, Los Angeles.
Bishop, F. C., Los Angeles.
Friedman, Maurice, Los Angeles.
Jesberg, Simon, Los Angeles.
Corpe, S. L., El Monte.
Dickson, A. R., Los Angeles.
Campbell, Matthew, Los Angeles.
Brown, Mary Hess, Los Angeles.
Irwin, Jno. C., Los Angeles.
Keyes, Henry S., Los Angeles.
Latimer, J. A., Pomona.
Leonard, Walter, Los Angeles.
Auerback, Louise, Los Angeles.
Tebbetts, J. H., Los Angeles.
Brown, J. Scott, Long Beach.
Burk, E. E., Los Angeles.
Butler, O. W., Los Angeles.
Coller, Fred'k. A., Los Angeles.
Daniels, Wm. H., Los Angeles.
Dillon, Jas. Marion, El Monte.
Fisher, Ward L., Pomona.
Germann, Albert C., Los Angeles.
Heylmun, H. H., Long Beach.
Kittle, Walter F., Los Angeles.
Lyon, Geo. E., Los Angeles.
McClelland, Everett S., Los Angeles.
McKellar, Jas. H., Pasadena.
Probasco, Harriet G., Los Angeles.
Schwartz, D. Z., Los Angeles.
Smith, F. Holmes, San Bruno.
Brooke, W. A., Half Moon Bay.
Paulson, J. E., San Quentin.
Ellis, W. L., Calexico.
Richter, H. C., Calexico.
Brown, F. Earl, Fellows.
Goodall, Oswald P., Bakersfield.
Smith, Joseph Kent, Bakersfield.
Wagner, Jas. H., Selma.
Martin, Wallace Perry, Fresno.
Aldana, E. M., San Francisco.
Smith, John Jacob, San Francisco.
Stephenson, H. A., San Francisco.
Williams, Francis Thos., San Francisco.
Dickinson, C. C., McCloud.
Dunlop, Florence, San Francisco.
Tillman, F. J., Oxnard.
Hicks, James M., La Grange, Cal.
Morgan, Jas. Wooley, Modesto.
Turley, Martin Van Buren F., Oakdale.
Von Werthern, Joseph, San Francisco.
Browning, Chas. L., Chico.
Dickinson, A. E., San Jose.
Rose, L. M., San Jose.
Baxter, Frank Stanley, Gonzales.
Myers, G. R. B., Napa.
Gunn, Francis G., Willetts.
Willey, J. H., Porterville.
Kretsinger, Geo. A., Oakland.
Miller, Thurlow S., San Francisco.
Klussmann, Hans Otto G. T., San Francisco.
Calkins, Jesse Wilbur, Oakland.
Denman, Claire H., Berkeley.
Maine, Alva F., Oakland.
Musser, Parley Pratt, Oakland.
Richards, Dexter N., Berkeley.
Harding, H. W., Oakland.
Gompertz, Kate R., Berkeley.
Bartlett, Edwin I., Oakland.
Welin, A. F., Rio Vista.
Hardie, Wallace B., Hume.
O'Konogi, B., Fresno.
Smith, C. E., Oakdale.
Dingeman, F. J., San Diego.
Byrnes, R. L., Los Angeles.
Eude, F. Macbeth, Pasadena.
Hall, Wm. Ethelbert, Los Angeles.
Littlefield, E. W., Los Angeles.
Morrison, W. A., Los Angeles.
Stookey, Bryon, Los Angeles.
Zarraga, Fernando, Los Angeles.
Fujimori, N., Los Angeles.
Thomason, Geo., Los Angeles.
Jacobs, Jay, San Francisco.
Belgum, H. N., Richmond.
Woodward, Asa George, Los Angeles.
Campbell, Matthew, Los Angeles.
Brown, Mary Hess, Los Angeles.
Dickinson, C. C., McCloud.

DEATHS.

Kerr, William Watt, San Francisco.
Anderson, Winslow, San Francisco, died in New York.
Colman, Frederick W., Lodi.
Lee, Lewis, San Francisco.
Morse, Douglass H., San Francisco.
Hearne, Joseph C., San Diego.
Von Hoffman, Charles A., San Francisco.
Carder, George H., Pasadena.
McConnico, Clifford V.
Brown, Earle M., Palm Springs.
Goldschmeidt, Leopold, Los Angeles.
Magnus, Max Edw., San Francisco.
Harvey, John W., Chico (died in San Francisco).

California State Journal of Medicine.

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IMPORTANT NOTICE!

All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

VOL. XV JULY, 1917 No. 7

AMERICAN REMEDIES FOR CHINESE AILMENTS.

Under this caption we published, in the last issue, a press notice which issued from the Bureau of Foreign and Domestic Commerce of the Department of Commerce in Washington. If you didn't read it last month, read it now. We published it without comment in order to see if anyone would object to its propaganda. One man did. But perhaps no one reads the editorials. It is well to do so; every now and then they contain something worth while, contributed by someone outside this office. But to return to our muttons. How can a government which devotes so much time and money to the scientific care of hogs and sheep and chickens and cows and grapes and pears, publish such arrant rubbish as this:

> Through judicious and persistent advertising the natives are gradually being educated to the necessity of paying some intelligent attention to their ailments and are responding remarkably well. For this reason it is not difficult to introduce a good article at a reasonable price, if supported by the right kind of advertising.

Isn't it funny how different is the standard of intelligence in the Department of Agriculture, for instance, and in the Department of Commerce? We wonder why.

DRUGGISTS' COMMISSIONS.

There have already developed interesting features as a result of our editorial, "There Be Land Rats and Water Rats," attacking, in the last issue, the exchange of commissions between the physician and the bandagist. We have been assured by certain druggists that the giving of commissions to physicians in return for prescription business is greatly on the wane, but still exists, and that the druggists see no way out. They are ashamed of this phase of their business and would like to see it abolished, but evidently they are so poorly organized that they can not hang together and put through a reform of this sort. But the druggists are not the only culprits. There are, and we say it regretfully, those among our own ranks who not only accept commissions, but insist upon them; those who will go so far as flat-footedly to refuse to pay the druggist for materials purchased even though the items run into the hundreds of dollars, and have the effrontery to defy the man, to whom they are legally and morally indebted, to sue for the recovery of his claim; those who do not accept cash but keep their homes and offices supplied with drugs and toilet preparations for which they do not pay, and do not intend to pay. The druggist expects the man who sends him none or few prescriptions to pay for these things, but does not care whether the man whose prescription business is worth while pays or not. Most druggists claim that all druggists pay commissions on prescription business to some doctors, and that the loss which would ensue to any one of them as a result of an independent above-board declaration against the practice, would be ruinous.

On the heels of this statement, one pharmacy has done that very thing. It has a printed circular which it has mailed to many physicians, and which will be wrapped with each package, so that the patient may know what is going on. This circular reads, "Our institution is entirely individual and has no financial or pecuniary connection with any physician. If the doctor directs you to have your prescription work done by us, he does it solely for the reason that he knows we can be absolutely depended upon to dispense exactly what he orders. . . . All of which proves that he has your interest at heart."

That is the milk in the cocoanut.

READ THIS—IT IS FOR YOUR BENEFIT!

You have had it drummed into you until you are sick of it, that to help the JOURNAL you must patronize its advertisers. Now we are asking your help to get advertisements. It is safe to say that of the members of the Society, not less than 2600 own automobiles, and that probably 80 per cent. of them represent not more than eight or ten makes of car. We think that it would be worth while for automobile dealers to advertise with us. In order to impress them we must be able to talk facts. We want a census of the automobiles owned by the members of this Society. Please fill out the coupon on page xxxvi of the back advertising section and mail it to this office at once. It takes but a minute to do it and it will help us and therefore yourself. Please do it now, before you forget.

OUR LEGAL RECORDS AND THE INDEMNITY DEFENSE FUND.

The practice of medicine depends perhaps more than any other branch of scientific endeavor upon experiment and inductive reasoning. And yet it is very difficult to direct the attention of men of this type of mind to matters of intense personal interest to them. We refer to the records of our Legal Department.

These records of claim after claim and case after case against physicians, should engage the careful consideration of every member. They show conclusively, first, that neglect, carelessness, and lack of skill are not charged only against the younger men, the more inexperienced men, and the men who might not be termed the most learned or careful in any given line of work. But on the contrary, these records demonstrate that these claims are made and suits are brought with the greatest impartiality against the most experienced, the most skilful, and the most careful of those of whom the profession can boast.

Secondly, these files show that rapacity and ignorance refuse to recognize that man is mortal; that there are few specific remedies; in a word, that a physician is not a warrantor of cures nor a guarantor of diagnosis and treatment.

Thirdly, these documents record in unmistakable language that no matter how devoid of merit such a claim may be, no matter how outrageous or ridiculous its assumed basis in fact or theory, a very high degree of legal skill, a vast amount of work and vigilance is frequently necessary to protect the property, and preserve the name and reputation of an able, skilful and devoted member of the profession.

To meet this situation more adequately the Indemnity Defense Fund was instituted.

After months of labor, thought, and care, our Council and the Legal Department have worked out the rules and regulations governing the Fund. Copies of the Coverage Rules are being mailed to the members who have subscribed to it. The books of the Trustees have been opened, and the whole machinery of the plan is under way.

Subscriptions to the Fund are coming in. The Council has determined that until December 31, 1917, the amount shall remain the same, viz.: $15 in cash and $15 by note. We undertake to say that this is the best investment of $30 that any member could make.

We do not advance this proposition merely because it is a Society undertaking. It is based on facts, upon our own legal records covering the past eight years, and upon the lively recollections we maintain of the anxiety and worry these attacks have brought upon our members. This conservative, carefully-worked-out plan of adding to our splendidly organized Legal Department, indemnity against possible adverse judgments should receive the earnest personal support of each member of the Society. The first step in that support is a subscription to the Fund.

Full details regarding the Fund are in the hands of the Secretary of your County Society. If you have not already subscribed, can we say more to urge you to do so immediately? Your protection under the Fund commences with the day your subscription is received by the Secretary.

INSURANCE AND THE INDEMNITY DEFENSE FUND.

When the Legal Defense Department was first instituted in 1909, no distinction was made as to the defense of members accused of malpractice, between members who were protected by corporate insurance and members who were not. In 1912 the constantly increasing cost of maintaining the Department caused the Council to adopt the rule that if a member were insured he must elect whether or not he desired the insurance company or the Society to undertake his defense. There has been a great deal of discussion and criticism of this rule. It was adopted solely for reasons of economy and because the Council felt that by doing so the greatest possible good would be extended to the greatest possible number in the organization. The rule has ever since remained in force, and for the same reasons, but if a member is insured and he does elect to have his insurance company protect him, the Society nevertheless is interested in every case and affords such general co-operation as it can. Where the circumstances are peculiar and special, the Council has in one or two instances authorized active participation by the Society's Legal Department as well.

It is perhaps hardly necessary to say that a member although insured, nevertheless strongly desires the active co-operation of the Society through its authorized representatives in his particular case. The Indemnity Defense Fund meets this situation by affording both legal defense by the Society and indemnity against a possible adverse judgment.

Our Legal Department does not advise any member who is otherwise insured to relinquish that insurance upon joining the Indemnity Defense Fund, but to retain that insurance and join the Indemnity Defense Fund as well. It should be borne in mind that while an accurate statement cannot be made in this regard, the Indemnity Defense Fund does not mean a regular annual assessment for its maintenance. We will later have space to say more upon this subject.

MILITARY MEDICAL NEEDS.

There has been a great response to the initial calls for physicians in the Army and Navy Medical Corps, and the Medical Officers' Reserve Corps. And yet the need is so great that the real demand is still most inadequately met. The actual loss of medical officers in the armies of England and France has served to accentuate the urgent requirements of civil practice in those countries. Particularly in France the new public health problems incident to the war, such as the enormous problem of tuberculosis control and venereal prophylaxis, are demanding a new army of medical men who only in part have thus far been forthcoming. These new requisitions of physicians must be filled largely from the United States, and this

must be done in addition to supplying an adequate medical personnel for our own army and navy.

There was published in the last issue of the Journal, an appeal from Dr. J. Henry Barbat, president of the Medical Society of the State of California, for the enrollment with one of the medical services of every physician whose circumstances would at all permit. We repeat that appeal, not in view of a poor response from the physicians of California,—because the response has been already exceedingly gratifying,—but we repeat the appeal because of the enormous obligation and necessity resting on physicians by virtue of their very profession, and the crying demand for their present service on a war basis. It is again urged that each individual reader of this page consider most seriously within himself whether he cannot enroll in one of the military services.

Thus far there has been proportionately a much larger enrollment among the older physicians than among the younger. And yet no physician who has graduated within the last four years should content himself with other than the most substantial reasons against enrollment. In the military service, the younger officer has an immense advantage. If he enters the regular medical corps of army or navy, this advantage is peculiarly great as his order of seniority rises.

A feature which every physician should emphasize in his daily rounds is the need for enlisted men in the sanitary troops. The physician best of all can appeal to young men of his acquaintance to enlist for this service. It affords sure promise of action, valuable experience and training, and danger to inspire any man's best courage. Each and every physician in the state, whether enrolled, superannuated, incapacitated, active or whatnot, ought to inform himself thoroughly on medical military organization, and become an active campaigner for recruits for the enlisted Sanitary Service as well as for the Army and Navy Medical Corps, and the Medical Officers' Reserve Corps.

THE ALCOHOL QUESTION.

I. PHYSIOLOGICAL CONSIDERATIONS.

Comparatively little data of scientific value is available on the exact physiological action of alcohol. Its use as a medicine is rapidly disappearing, as its harmful by-effects are better understood. That it has a certain food value is known. But it is not a protein substitute or a tissue builder. It does afford direct energy on oxidation and may partly replace fats and carbo-hydrates to a limited degree. With this limited food value is to be remembered too its narcotic and toxic action, and its inclusion in the class of habit-forming drugs. Since its narcotic properties have been evaluated, it no longer ranks as a stimulant. Thus has there come a decided change in the scientific estimation of alcohol,—a change paralleled by an equally decided change in social estimation of it. For whereas society of but a few generations ago considered alcoholism rather a distinction, the converse has become a present fact.

1. (New York City Department of Health, Monthly Bulletin, May, 1916.) According to the ergograph, alcohol reduces physical power by about 8%. Psychological tests show it to produce a mental efficiency loss of from 3 to 27%. Its direct production of disease, especially in the gastro-intestinal tract, nervous system and mentality, is well known but perhaps represents a toxic action appearing only with excessive or long-continued use. With this should be noted its effect in increasing susceptibility to infectious diseases. A conservative estimation from careful data places about 10% of insanity at the door of alcohol. The 36,000 insane of New York state in 1915 cost $6,200,000 for maintenance. Elimination of alcohol would therefore have saved $620,000 to that state on this score alone.

Literature on the physiological action of alcohol is enormous but nearly all of it is invalidated from the scientific standpoint by lack of proper control and absence of personal bias and prejudice in the conductor. The alcohol program of the Carnegie nutrition laboratory furnishes one of the first attempts to get really reliable evidence of this action. Benedict summarizes the results so far obtained in the investigation of the effect of alcohol in moderate doses on psychological processes in man (Science, 1916, XLIII, 907). On normal subjects, alcohol increased the latent time of the patellar reflex about 10 per cent., and reduced the coincident muscle thickening by 46 per cent. The latent period of the protective lid reflex was increased 7 per cent., and the extent of the lid movement by 19 per cent. The latent period of speech reaction was increased 3 per cent. Memory and free association were but slightly affected.

The sensory threshold, as shown by sensitivity to faradic stimulation, was raised by 14 per cent. In motor co-ordination tests the number of finger movements in six seconds decreased by 9 per cent. and the velocity of the eye through an arc of 40 degrees was decreased by 11 per cent.

All of these experiments showed alcohol as a definite depressant, exerting least effect on the more highly organized processes of free association and memory. The pulse rate is constantly accelerated by inhibition of the cardio-inhibitory mechanism. "The higher senses alone show capacity for autogenic re-enforcement," and are most free from voluntary re-enforcement and control. They are the ones least affected by alcohol. Benedict warns against indiscriminate application of these results to industrial and other problems until the mass of carefully controlled experimental work is greater, and these results are confirmed.

It appears then that alcohol is useful as a drug and as a food in very limited and carefully controlled situations alone, and that its employment in either capacity is attended by serious risk of habit formation, and likewise by the necessary concomitants of its narcotic and destructive physiological action. Judgment of what constitutes a proper situation for its exhibition must therefore be influenced by consideration of whether the good to be achieved is worth the full price of the effect produced, whether the cure may not be worse than the disease. Furthermore its cost is a serious

objection to extensive use for its caloric value. The money that will buy 30 calories of sherry or 240 calories of beer, will pay for 2180 calories of bread or 3720 calories of oatmeal. There is to be counted too the pleasure of alcoholic beverages. Decision as to how far concomitant dangers should influence the use of alcohol for pleasure, is a matter of personal judgment.

So much for the credit balance. On the debit side is to be placed conclusive scientific data showing the narcotic action of alcohol and its interference with physical health and efficiency, mental health and efficiency, and industrial safety and efficiency. It is yet to be shown that as a rule alcohol as a beverage benefits its users physically, mentally or industrially and economically. It is self-evident that alcohol is not a physiological necessity. Its proved dangers and better understood physiological action make the seriousness of its use largely proportional to the amount used, with the important modification that few drugs have greater tendency to habit formation.

THE PROVOCATIVE WASSERMANN REACTION.

The value of the Wassermann test in *helping* make a diagnosis of syphilis is universally recognized; but the usefulness of the "provocative Wassermann" is not so well known. This latter procedure may be described as follows:

To a patient showing a negative Wassermann but still suspected of having a focus of the spirochetae pallidae in his system, a small intravenous injection (0.3 gramme) of salvarsan or neosalvarsan is given. If the organisms of lues are present, the spirocheticidal action of the drug will cause the liberation of substances which "provoke" the appearance of a positive Wassermann reaction. It is best to examine the blood *twenty-four hours* and again *forty-eight hours* after the injection, for the great majority of positive cases show the reaction within forty-eight hours. Very shortly in most cases the blood will become "negative" again. By this means a doubtful reaction (plus minus) may be converted into a triple or quadruple plus reaction. This test is valuable also in "latent" cases and in *helping* determine whether or not a patient is cured, and it may be of use in early cases where the physician cannot examine material from the ulcer with the dark field condensor. Of course the examination of serum from the sore with the dark field condensor is the most valuable means of making an early diagnosis, but in doubtful cases the "provocative Wassermann" may help.

The subject is fully discussed in the following articles:

Gennerich (Berl. klin. Woch. Sept. 19, 1910, No. 38; Milian (Paris Dermatol. Gessell. Dec. 1, 1910); C. F. Craig (Am. Journ. Med. Sci., 1914. Vol. 149, p. 53), and C. F. Craig (Am. Journ. of Syphilis. Jan., 1917, p. 205).

This procedure has been utilized in the Skin Clinic of the Stanford University Medical School for several years and its value seems established; but it must not be forgotten that in the total absence of any supporting evidence, a single positive Wassermann is not sufficient to make a diagnosis of lues.

Original Articles

A NON-SUTURE OCULAR TENDON SHORTENING WITH RESULTS OF FORTY OPERATIONS.*

By RODERIC O'CONNOR, M. D., Oakland, Cal.

At first thought one is apt to jump to the conclusion that, like the countryman looking at a giraffe for the first time, "there ain't no sich thing" possible. However, the thing is so simple the wonder is that it was not thought of long ago.

The idea came to me one day, when I was shortening a saddle girth, that an ocular tendon could be shortened in exactly the same way by dividing it into several bands. *In this way a safe, and certain shortening, can be secured, without the constriction and cutting, that is a necessary part of every suture method.* It then becomes merely a question of sufficient experience upon which to base an estimate of the amount of shortening needed in any given case. This because a definite shortening of the inelastic tendon does not mean the same in the total muscle, due to the elasticity of the muscle tissue.

By using this principle the need for tenotomy is reduced to an absolute minimum. In this connection you will probably agree that tenotomy has been looked upon as a necessary evil, and done with few exceptions, only because of the uncertain results from advancements—at least in the hands of the average operator.

Figure 1 (a) shows the course of the rope in shortening all the strands of the girth; (b) shows the looping of the strands about the rope after it has been straightened. It is clear that the rope takes the constriction and therefore the shortening is permanent. I have used saddle girths, so shortened, for years. There can be, in my opinion, no argument against the principle. However, the possibility of the tendon bands straightening with loss in effect upon absorption of the catgut used as the shortener was considered and therefore I have never used this method.

I then began to figure on means to shorten, in a similar manner, a band on each margin of the tendon, wide enough to take the full action of the muscle, this shortening to relieve an advancement, tuck, or resection, of the remaining central portion, from all tension during the healing period. In this way, by the time the catgut is absorbed, the central tongue is firmly healed in position and able to take the muscle action. This, therefore, is the method I have used in all but two of my operations.

Figure 1 (c and d) show the first and second stages in the passing of the shortener; (e) shows the marginal bands shortened, and the evident re-

* Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 20th, 1916.

laxation of the central portion (f) which can be taken up the amount of its looseness and the means employed be under no tension. Inasmuch as a double loop is formed in this method, the shortening is far greater than in the first method.

My chief desire in working up this method is to avoid tenotomies especially of the interni and the results as shown in the following summary speak for themselves.

RESULTS.

Shortenings of externi for concomitant esotropia and esophoria in degrees varying from 7 prism to 60 of arc—24. In all but one of these the result desired was secured and *no* tenotomies of the interni done. The exception was on the second externus of the 60 degree case, and in this the tendon was shortened in three bands instead of suturing the central tongue forward. I had gotten about 35 degrees of effect from the first operation, which the second did not appreciably increase. This, therefore, is not my typical method. One case later developed a gonococcus infection and the final result was a failure.

Shortenings of externi for paresis of that muscle—2. Cosmetic and functional results were secured in both cases without tenotomy of interni.

Shortening of paretic interni to correct exotropia due to the paresis—3. In all of these tenotomies were needed to aid the shortening of the weak muscle. In two perfect results were secured. The other was a case of 70 degrees exotropia due to 3rd nerve paralysis of 25 years standing. She simply wished to "get the eye somewhere around to the front" and we got 53 degrees of the total which was the best possible I believe.

Shortenings of interni to correct concomitant exotropia in degrees varying from 9 to 55 degrees of arc—6. In five of these full results were obtained without tenotomy; in the other, the outer two-thirds of the upper and lower recti were cut increasing by 5 prism degrees, the effect produced by the shortening which was insufficient due to error of judgment—only 8 prism degrees being secured.

Shortenings of interni to correct insufficiency of convergence—3. Two of these were on the same man and increased his convergence from 5 to 26 meter angles. In spite of this tremendous increase an exophoria of 7 prism degrees was reduced only to 4. An externus was partially cut by my multiple incision method and orthophoria secured. The other case had normal balance for distance, but 14 of exophoria for near, and but 6 meter angles of convergence, which was increased to 11 by the operation. The headaches he used to have after near work have ceased.

Shortening of a superior rectus to correct a paresis of 30 years standing—1. Before operation the woman could fuse images only in the extreme lower limit of rotation, whereas, afterwards she could fuse to a point 10 degrees above the horizontal—measured on the perimeter.

This case was checked up six months later and found to have been corrected 10°. The remaining 9° was secured by partial tenotomies and she now has vertical orthophoria. This later information operates to remove the case from the list of failure to that of success.

Shortening of an inferior rectus for a 19 prism degree concomitant hyperphoria. Through fear of doing too much too small a catgut was used and an inappreciable effect was secured. This, therefore, is the only absolute failure in my *typical method* and was due to error of judgment. The other failure was the one where the tendon was shortened in three bands.

One of the greatest advantages of this operation is, that squint cases may be operated on at any age, consequently, in young children it may be done, allowing the faculty of binocular stereoscopic vision to be developed in a normal way, and amblyopia exanopsia be prevented without the necessity for monocular patches, or the use of atropin in the good eye. There is no more reason to suppose that a pair of eyes straightened by an operation such as this will not remain so (as well as eyes that are naturally straight to begin with) during the course of head development. My last two operations were in children three years of age, and the immediate results were excellent. They are too recent to include in the statistics. When it is remembered that these represent my first 40 consecutive operations; that the method is still in its developmental stage as regards the estimation of amount of shortening needed in any case; that no tenotomies of the interni have been done; that no binocular bandaging has been used; that in all cases the patients were permitted to go about their usual occupations, many even without a monocular bandage, I think you will agree with me that the results are, to say the least, unusual.

A non-suture ocular.

Figure 1.—(a) Course of rope loops about strands of girth; (b) loops thrown about shortening rope by straightening it; (c) loop of shortening rope under a marginal band; (d) ends drawn through forming a double half hitch; (e) double half hitch transferred to marginal bands by straightening the shortening rope; (f) doubling and relaxation of the central section of the girth.

With an operation as certain and safe as this, I am able to follow an advice of Dr. Valk who says "with an operation that is perfectly safe and simple do not let the words 'operate as a last resort' influence you in any way. Decide from your examination that an operation is necessary and you may be confident of success." By this he means functional as well as cosmetic success.

Therefore I can see no reason for allowing so many cases to suffer for years from headaches and other reflex symptoms of eyestrain when the cause can be so easily and safely removed.

The present handling of muscle cases by the

average oculist is much like the older methods of handling intra-nasal cases—that is, largely temporizing in character. Nowadays intra-nasal work is practically entirely operative. Extra-ocular muscle work, will before long reach the same position and the hope of permanently altering anatomical defects by prisms, exercises, and other temporizing measures, will be given up.

A detailed description of the technic has been omitted, as taking up too much time, and I would refer any who may be interested, to my article in the *Ophthalmic Record* of December, 1914, as I have only made a couple of minor changes since that date.

Discussion.

Thos. J. McCoy, M. D.: I received Dr. Hulen's paper just a few days before coming to Fresno and have jotted down a few ideas I wish to offer in discussion of the same.

I congratulate ourselves on the excellent paper contributed by Dr. Hulen, covering so much of the subject in the brief time allotted him, again reminding us of the most modern and approved methods of treating this disease mechanically, and surgically, and describing his procedure in tucking the tendon which appeals to me more than the others I have witnessed. I am in hearty accord with him in the earliest attention for the development of fusion, binocular vision, and correction of strabismus for the attempted relief of amblyopia.

Thanks to the long and earnest efforts of Priestly Smith, Claud Worth and others, for their invaluable findings in establishing facts and methods, that we may prescribe relief. Few men have the opportunity, in abundance of material, the enthusiasm, and earnestness in specializing on this line of investigation as my instructor, Claud Worth of London. His ability and painstaking methods soon became recognized by his colleagues and he was favored by their referring cases to him in the Royal London Ophthalmic, the West Ham, East London and Loughborough Hospitals.

Think of notes on 2337 squint and heterophopias. Of these 1729 convergent squints along to May, 1906. After proofs by their investigations on the benefit of early attention in this disease, I am not surprised at Dr. Hulen taking issue with the gentlemen mentioned in his paper for waiting until the period is passed, to benefit the vision in these cases.

The paper described comprehensively the different findings, and methods of handling each of the three sample cases, and impresses the necessity of careful and early treatment in each. Unfortunately for the lack of training, and knowledge of fusion, binocular vision, and other causes of amblyopia and the early relief of the same by the family physician, who first sees these cases, it is late and many times too late for their relief. He should be a walking encyclopedia of medical information, both general and special for us, willing to assume all responsibilities for the patient as specialists in general, referring all cases, though it greatly depletes his income, even to starvation of himself and family; further, willing to assume the blames all, the errors all, of the profession and mankind in general in the beginning as in the dim declining years of life with a satisfied and sublime hope of his reward in Heaven.

The cardinal symptoms generally found more or less in every case of convergent strabismus are abnormal convergence, the imperfect development of the power of fusion, the visual sensation of the crossed eye is suppressed, the vision is subnormal and the eyes are hyperopia with or without astigmatism. Only very great anomalies of position furnish direct cause. It has been proven that amblyopia is not the cause, but the result of strabismus. If we consider a defect in the power of fusion to be the most important cause of strabismus, we can account why the error of refraction besides hyperopia is an exciting factor. Anisometropia is a predisposing cause and deviations may arise after excitement, fevers or convulsions. As one of the proofs of the absence of fusion, the cause of strabismus is a fact, that excellent cosmetic results have been obtained from operations, and yet the patient has no binocular singular vision. They may see double and cannot fuse the image although close. An imperfect power of fusion producing strabismus convergence. An abnormal inneration may develop, nervous factors, etc., and more is the urgent demand for the early relief as advocated in the paper. As the doctor has said there are cases, that after careful examinations, we find the only relief is by operation without delay, as an attempt to improve the vision as cosmetically.

The result of advancement after the methods of Worth and Reese have been so satisfactory in my experience, at times with some modification. I have never attempted the tucking method. However, the simplicity of the method appeals to me.

P. A. Jordan, M. D.: I have never had any experience with Dr. O'Connor's operation but it appears to me to be very simple and I am going to try it.

Regarding Dr. Hulen's operation of 1910, I have had some experience with it and always with the greatest satisfaction. I was much pleased when Dr. Hulen said to operate early. My belief is that from six to eight years is often too late. I have been chagrined, at times, to have patients of six, eight, ten or twelve years of age presented to me with the advice from the family physician, that they had been held aloof from an operation, thinking that an early operation would tend to an over-correction later on. I would suggest very early operation when treatment and correction fail. And readjust an over-correction in later years if need be.

I had one experience recently which I shall not soon forget. I was doing the Dr. Harry Woodruff operation of tendon tucking, and in order to make the sutures pass through more easily, I passed the 20 day chromocized catgut through vaselin. I recovered the sutures at the end of twenty days through an abscess, they not having absorbed at all. The abcess healed, but the squint is about the same as it was in the beginning. I think I shall try Dr. Hulen's new method more often than heretofore.

LOOK THROUGH
THE
ADVERTISING PAGES
OF
THE JOURNAL

GLAUCOMA; A CRITICAL SURVEY OF PRESENT METHODS OF TREATMENT.*

By HANS BARKAN, M. D., San Francisco.

The present methods of treating glaucoma can be divided into three classes: a well-defined medical one, the treatment by means of myotics; a well-defined surgical one, the classic iridectomy of Von Graefe; an ill-defined surgical one, the principle of which is to obtain a permanently filtering fistula of the eyeball; a certain hygienic and medical supervision and treatment is applied to all these groups and counts no more in the results obtained in one than in the other. This paper will take up these groups in the order mentioned, making an attempt to deduce from a study of the literature and from personal observation which group is likely to prove the useful one in a given case, and what may be said at present as to the advantages and disadvantages of each group, irrespective of any given case.

We all realize that the myotic treatment has its limitations: the class of case in which its use is contraindicated is that which can not be kept under observation; the itinerant clinical visitor; the mentally slothful and careless patient, private or clinic; the patient journeying to some spot remote from medical attendance. For all these I believe some operative method to be the only logical treatment.

Ophthalmologists all over the world have agreed for many years—since Von Graefe's iridectomy and through and including all the later operative proceedings—that the myotics properly used will do the following: An acute glaucomatous attack they will render easier of operation; the occasional exception may recover with their use alone; it may, as Schmidt-Rimpler points out, be wiser to rely on them in a one-eyed, aged, atheromatous individual, combined if needed with posterior sclerotomy or Heine's cyclodyalisis, than to resort to iridectomy; in the chronic sub-acute form they are pacifiers, crutches for the eye to lean upon, and do not for long detain the inevitable; in glaucoma simplex they act at their best and their employment in this class in preference to any operative proceeding has roused much discussion since Posey's results and advocacy of them; in glaucoma simplex iridectomy has proven of little value; the value in these cases of sclerectomy, of trephining, of permanent fistulas by means of gold threads, or of various other mechanical devices—methods by the way just as old in application and principle as Elliot's trephine is—remain very much to be proven. Five or ten years of good results is not conclusive; this impression is strengthened when reviewing the end results as published by the chiefs of many large European clinics—the statistics on all forms of glaucoma except the acute inflammatory attacks promptly operated upon, are very sad when the cases are followed long enough. While there are exceptions in respectable amounts, the larger proportion lose ground steadily, in spite of surgical or medicinal treatment. It warns us again that immediate results, or results after a few years only, are no criterion of permanent cure. What are we to do at present with our myotics? I should sum up the prevalent opinion of the leading ophthalmic surgeons as follows: In an acute attack, attempt by their means to reduce tension, relieve engorgement, deepen the anterior chamber, narrow the pupil, supporting this effort by leeches on the temple, dionin in ten per cent. solution, hot or cold compresses, morphine and general eliminative methods. Follow this proceeding by operation. Should light perception even be lost in the attack, this proceeding should be used, provided you see the patient in the first hours of the attack; 12 hours may be allowed to pass before the prospect of obtaining a good result by operative means is lowered; the loss of vision during this period is caused solely by the steamy cornea, turbid media and functional paralysis of the retinal elements, not by permanent anatomic damage.

As a method of treatment in all the forms intervening—the acute inflammatory attack at one end of the scale, glaucoma simplex at the other—they are worse than useless. Sub-acute cases of all types—that is, everything but glaucoma simplex—should be operated upon. The myotics will hold these cases too under control for some time, in many instances—yet a few years at the most sees in practically all of them a marked progress in the disease. In reviewing the mass of literature, direct references to which I shall not bother you with—a bibliography will be published with the paper—it is my impression that the present status of treatment of this class is as early operation as possible. Myotics are useful in the after treatment, provided the pupil reacts to them—if it does not, they are useless. In glaucoma simplex the myotics have proven most useful—and in this form the iridectomy scores but a low per cent. of good results and in a considerable number hastens the evil end. Our present operators are much divided on the question of treatment—some seldom operate, claiming better results with myotics, others, since the Elliot, the Herbert, the Holth, the La Grange and other operations intended to provide permanent subconjunctival drainage, operate on them by one of these methods. Graefe's iridectomy has in this class practically been given up. One thing I have noticed in reviewing the literature is, that the men of greatest experience are relying on the myotic treatment in glaucoma simplex to a great extent and speak with a certain pessimism as regards any appreciable benefit conferred by operation; especially often do they mention cases taking a worse course following operation, until the conviction has come to me at least, that the greatest per cent. of safe results will come to him who employs in these cases the myotic treatment, reserving operation for those who fail in function in spite of these drugs. I should conclude that as long as a glaucoma simplex retains the same vision and fields with which he came to you, just so long is the myotic treatment the

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proper one; only when these begin to deteriorate, or there develop, in spite of myotics—and massage, of which later—transient periods of obscuration and halo about the light—a certain sign that tension is raised at the time—is operation to be considered.

Turning to the classic iridectomy of Von Graefe, we find rather a reversion to its use in the recent literature. I do not mean that it had ever been abandoned, but the Elliot trephine has bored its way as persistently into our heads as it has into the eyes of our patients and it was therefore rather a surprise to me to see how many of our best men were preferring the iridectomy as the method of choice in acute attacks, using it with fair frequency in the chronic inflammatory and giving it up in the simple type only. Why is the trend of ophthalmic practice again returning to iridectomy for acute inflammatory glaucoma? Because it has been demonstrated by cases followed for years—I mean by that 15 to 20—that the great majority, variously estimated at from 70 to 80% remain cured. That once successfully operated, no after complication of the operative method employed need be feared. Can as much be said for the Elliot; taking it as the type of the permanent drainage operation most employed? Decidedly no. That the Elliot relieves the acute attack as well as the iridectomy, is true; that as great a number will stay intact and cured is not proved, as enough time has not elapsed to gather comparative statistics, but seems not likely. Why? The answer in the literature of the last two years is—too many late infections. These, varying in intensity from iritis to panophthalmitis, are trickling in from various clinics and private case records, in all countries; three to four years ago only an occasional one; now mounting to a respectable total, a sum which is bound to form every year a larger and larger per cent. of the total cases, if Elliot be adopted indiscriminately; for that means an Elliot done on good and bad conjunctivae, on people of good, low, indifferent or bad resistance to infection; the factor of skilful or of bungling surgery will remain fairly constant whatever method be employed. The planting of a permanent fistula then, into the eye of a glaucoma whom we know stands just as good a chance with iridectomy—and that seems, from my review of present day opinion and practice to be the belief—does not seem justified. As in all operative proceedings, there are exceptions to the rule. There are acute attacks of glaucoma in which it is so difficult to perform an iridectomy and in which it is so dangerous to attempt one, that here the greater permanent risk of the trephine operation must be ventured. In the chronic sub-acute forms iridectomy is not efficient in the majority of cases; in these and in glaucoma simplex we find the trend to be toward using some of the permenent fistulating operations, the Elliot being the choice of the majority. Permanent reduction of chronic hypertension Graefe's iridectomy seems to accomplish in only a small number of cases; witness its inefficiency in glaucoma simplex. In view of the possibility of after infection by the fistulating methods, there is becoming evident even in chronic inflammatory glaucoma, however, a tendency from some quarters at least, to do an iridectomy first and to add a trephine opening if the case does not improve. De Wecker, a good number of years ago, pointed out that those cases which did well were the ones with broad and ectatic scars and even then described the condition of the conjunctiva over them as being indicative of drainage; massage of these eyes after iridectomy was tried, the idea being that it tended to spread the tissues of the scar apart and allow freer escape of fluid. Gradle, of Chicago, advises massage as a supporting means of treatment; that it reduces tension somewhat is certain; one has only to feel a glaucomatous eye and then let ten students test the tension, feel it again and note the difference. Post-operative treatment in all cases should be continued by myotics; in a rather large series of cases observed, one clinical fact here has struck me; some of the fistulating eyes react very well by pupillary contraction to the myotics, some of the same general appearance and previous tension, do not; in many instances the right and left eye of the same patient. In these cases the eye not responding by pupillary contraction to myotics hardens and gradually loses function, in spite of the fact that clinically it appears to have sub-conjunctival drainage. In this fact I believe we are offered some index as regards prognosis; the eye, the pupil of which does not respond well to eserine, in spite of a trephine opening, I consider the prognosis to be poor in, no matter what or how many operations may be added. It seems to me undeniable that relief of tension alone does not constitute the cure in all cases; there are other degenerative factors involved, possibly nutritional, possibly nervous, entirely apart from the tension. The saying of Schnabel, "anything, anywhere, anyhow in the anterior chambre," will certainly cure a certain number; be it a large iridectomy embracing the root of the iris, a small one leaving the root, a cyclodyalisis, an iridontasis, an iridencleisis, an Elliott, a LaGrange—a certain number are and stay cured; but the other group will not be cured by "anything, anywhere, anyhow," in the anterior chambre—and here the cause is often not mechanical and located anteriorly. Unfortunately we have no way of separating these two groups clinically, thereby rendering a more accurate prognosis.

Turning to the third group, the one obtaining a permanently filtering fistula—in 1906 Elliot advanced his trephine operation—since then this operation, LaGrange's Sclerectomy, Herbert's short flap method, various deviations and additions in the form of silk thread or gold setons, have been the representatives of the filtration group. Hailed at first with great enthusiasm, employed extensively in all types of glaucoma as the operation of choice, we now find men of wide experience not quite as enthusiastic as they had been—find them resorting to the Elliot only when iridectomy promises little—altogether find that the tendency is to limit the Elliot to chronic inflam-

matory glaucoma and to glaucoma simplex—and in the latter only should the myotics prove insufficient. The occurrence of late infection is one reason; it is interesting to note, also, that the occurrence of an infection or two made some surgeons review their previous iridectomy results carefully: these were then found to be so good, that in view of the ever present danger of infection, they decided to return to their original method. Others, seeing the infection increase—in the hands of good men, who reported them—it surely is not unfair to believe that many infections are not reported by the average practioner—remembered the old surgical principles of ophthalmology—the recognition as in cataract operations, of danger by infection in iris prolapse, in cystoid scars and returned to the iridectomy as their choice. What are the results of the fistula operations? And right here I feel that we should throw out of court all statistics based on any other than civilized communities; those of India for one, those of the big general hospital in Jerusalem, for another. This type of operation has been employed about six years in Europe, about four years in America; these statistics count, some of them—insofar as statistics of such a short time can count in a disease the course of which is years. The reports here are good—apart from the after-infections, fully as good as iridectomy; in glaucoma simplex, better. Better in so far as no immediate deterioration after operation happens—or but very seldom: are they better in the long run? We don't know—there has not been any long run yet. We do see infections—how many will there be in the long run? We don't know.

Personally, I like the Elliot operation. I have done a fair number, with no infections, as far as I know, and assisted at 140, all of which were smooth; nor did I see an after infection appear at the clinic in a two years' residence. In view of the occurrence of after-infection, however, of the fact that some other methods of procedure work as well, in a well-defined group of cases; and partly from personal conviction, partly from a review of the best literature on the subject, I will end by submitting a table of therapeutic preferences, which should at least have the merit of arousing discussion.

(1) In the one-eyed, no fistulating operation unless all other methods fail.

(2) In acute inflammatory attacks, such reduction as is possible by myotics, followed by iridectomy; this if technically very difficult, preceded by posterior sclerotomy.

(3) In chronic sub-acute glaucoma, iridectomy or Elliot: the former should the eye be in relatively good condition, the latter should it not be.

(4) In glaucoma simplex myotics while in statu quo. Elliot if it fails.

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Discussion.

E. C. Sewall, M. D.: I have taken much pleasure in Dr. Barkan's paper. It shows judgment in the selection and clearness in the exposition of

the views on the subject as recorded in the literature.

I have performed Heine's operation of cyclodialysis a number of times, but am convinced that the principle involved is fundamentally wrong. In one case only was I pleased with the result and that was following the luxation of the lens. This eye became of normal tension and retained it.

My experience with the Elliot operation is small but very satisfactory. I believe it is an operation of great worth. Further experience will teach us where most is to be expected from it.

C. M. Hosmer, M. D.: I desire to report operative results on six eyes—three cases. M. M.—A woman of thirty-two years, chronic glaucoma with recurrent subacute attacks. Left eye trephined February 11, 1914; right eye April 3, 1914. In each eye there has been some low grade iritis with pigment adhesion to anterior capsules. Vision with correcting lenses—O. D. 6/12, O. S. 6/15, O. U. 6/9- 1. In each eye there is a thin transparent conjunctival covering of a widely patent scleral trephine-hole. I live in constant dread of deep infection.

Mrs. Q.—A woman of sixty-two years,—type of glaucoma as above with long periods between mild attacks. Right eye, vision 6/6 but with tension rising and field narrowing during six weeks' observation. Left eye absolute glaucoma. Right eye was trephined and immediately followed by violent acute attack in left. On this eye, the left, an iridectomy was done. A stormy and long drawn out inflammatory process followed in each eye with total blindness.

The third case was that of a man with simple chronic glaucoma. Both eyes were trephined and in each the ballooned out iris picked up and snipped off. In neither eye was there the slightest inflammatory reaction. Operatively the results were ideal. There was not, however, the least benefit clinically and he has gone on to practical blindness.

F. M. Shook, M. D., Oakland: I would like to ask Dr. Barkan if he has compared the filtration time with the Schiotz tonometer in his trephine cases and his iridectomy cases? Some three years ago I determined the rate of filtration of about twenty cases of glaucoma which had been operated by the Elliot method. Nearly all of them showed a filtration rate which either approached closely to the normal rate or was even less. The technic followed was that of Schoenberg, whose paper inspired the work. It would seem to me that a study and comparison of the tonometric readings preceding and following the operative treatment of glaucoma by the trephining and iridectomy would give data from which very exact deductions might be drawn, as regards the sphere of usefulness of these operations.

There are two accidents which the beginner frequently makes in using the Elliot trephine, (1) wounding the anterior capsule of the lens with a resulting traumatic cataract; (2) wounding the ciliary body by directing the instrument too far backward.

V. H. Hulen, M. D.: In the main I agree with Dr. Barkan's excellent presentation of this important subject. I have, however, more confidence as yet in the trephine operation than the previous speakers. The trouble is that we are apt to become too enthusiastic at first over new methods of treatment, and later, when we see or read reports of unfortunate results in even a few cases, we tend towards the other extreme. I have made it a point to see many operators both in this country and abroad perform the Elliot trephining operation, and it was noted that but very few of these carried out the Elliot technic precisely. To obtain the best results it is particularly important to observe the precise and correct technic put forth by Elliot, any deviation, intentionally or otherwise, is unfair to both the operation and the patient.

I must criticize just one statement as I understood it as made in Dr. Barkan's paper, i. e., in glaucoma an iridectomy may be done first and if it is not successful it could then be followed by an Elliot trephining. The eye upon which an iridectomy has been done previously for the relief of glaucoma is not in condition to give as good a result from secondary trephining as could have been expected to follow one done primarily. One reason is that an iridectomy is usually done above and that also is the site of election for trephining especially to avoid the danger of secondary infection. Now an incision having been made above for the iridectomy is followed by conjunctival adhesions, etc., which make the subsequent formation of a correct flap difficult or impossible when trephining secondarily, furthermore the conditions of the eye are quite different.

K. Pischel, M. D.: Several years ago we invited Dr. Martin Fischer to the meeting of our section of the San Francisco County Medical Society. He spoke very convincingly about his theory of glaucoma and demonstrated his interesting experiments with excised eyes put into weak acid solutions, which caused the vitreous to swell and sometimes even burst the eyeball. He claimed and repeated this claim in his newest publication, "we have in the use of subconjunctival injections of sodium citrate solution, a method by which we can at any time rapidly reduce the abnormal tension of an eye in a state of glaucoma."

I tried it in several cases but did not find any lowering of the tension in any case. The pain from the injection was always very severe.

Colonel Elliot published his first paper on trephining in 1909. I had the pleasure of meeting him in Birmingham at the British Medical Association in 1911.

I have performed this operation thirty times in twenty-three eyes with the following results:

Vision—Better in 6 cases; the same in 7 eases; worse in 4 cases. In 6 cases amaurosis existed before the trepanation.

Field—Larger in 7 cases; the same in 4 cases; smaller in 1 casc; in 8 cases the field could not be taken.

Tension—Lower in all cases but one in which it was doubtful.

I consider these results very satisfactory. In chronic and simple glaucoma, where the iridectomy as formerly made always reduced the central vision on account of the coloboma, trephining with basal iridectomy is decidedly superior. I wonder whether the late infections could not be reduced in number by stitching the flap? While Elliot does not consider it necessary, I always stitch the flap with rat-tail sutures because the one time I did not stitch it it curled; in that way it may leave the wound practically uncovered.

While at the beginning I used Elliot's trephine, or, as Webster's Dictionary would call it, "trepan," I adapted it later to the dental engine. This allows much quicker work, which is of some importance as the patient is apt to become unruly. I have had a stop made to prevent the trepan from entering further than the anterior chamber.

Hans Barkan, M. D.: Regarding the observations of Dr. Franklin, it is true that it is hard to keep some patients under the use of myotics, and, of eourse, there may be reasons in some individual cases why one should substitute operation almost at the very beginning, but regardless of this I think the theory is correct, if the vision remains the same as it was when the patient came to you. Dr. Franklin spoke of secondary cataracts in these cases. In my own experience, and in the cases in which I assisted Dr. Meller, I did not see

this happen once. Iritis is combated in these cases by the instilling of a 4% solution of atropine twelve hours after the operation. The condition of the conjunctiva must not be neglected. The conjunctiva must be looked after and the tear sac must be examined. Unless the eye is in proper condition, do not make an incision in the eye ball. We have after-infection spoken of with no reference to the condition of the conjunctiva. In a few cases in which I was to operate, have found a friable conjunctiva and the episcleral layer would be very thin. In these—and this condition can be investigated before operation—I have not performed the Elliot. I think more attention should be paid to this.

The cyclo-dialysis was not used in our clinic. It lowers tension in 40% or 50% of cases. Lowers it permanently in a few cases only. It is not used to any extent. Dr. Sewall's suggestion that it is useful in certain cases of secondary glaucoma is a very good one—those due to luxated or subluxated lens for instance. The suprachoroidal space would fill in with aqueous and during that time it would be very useful, the tension would be lower for a few days or a few weeks and the secondary attack would pass off.

Dr. Hosmer's cases are instructive merely to emphasize the unfortunate results we get. They justify what I said as regards the non-reported cases of infection.

Dr. Shook's remarks interested me very much as I am quite in the dark regarding the matter he mentions, and would like to know more about it.

Regarding Dr. Hulen's remarks will say that I feel very much in sympathy with what he has said, especially about the unfairness of judging an Elliot result when iridectomy has preceded. If you do it down below you are very much more apt to get an infection than if you did it above. Quite a number of infections appear at the point operated the second time. A trephine made below sometimes makes the operation easy in unruly patients, but is more liable to after-infection. I think Dr. Hulen's point of doing one thing or the other is well taken.

Speaking of the Elliot trephine, his point is also well taken. Many take up the Elliot operation because they believe it is easy to do after one has been shown how. A man who does only four or five per year is likely to make a botch of it and these cases are going to be infected.

Fischer's treatment I will leave untouched. I know nothing about it, and Dr. Pischel has told of his experience with it as have some of the other gentlemen.

Dr. Pischel's remarks about suturing the flat interested me very much. I have never seen Meller put a stitch in the flat in over one hundred operations. I have done over forty and have never put in a stitch. I do not know if the technic is any different but my flat adheres tightly, and I have never seen the flat turn over. Infection does not take place at the edges of the flap. It takes place through the flat over the trephine hole.

I am very glad this paper aroused such spirited discussion. Glaucoma is of such interest and importance that only by exchange of experience can we profit very much.

PATRONIZE

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THE MODERN TREATMENT OF IRITIS.*

By M. W. FREDRICK, M. D., San Francisco, Cal.

Nothing is better calculated to illustrate the impossibility, or unreasonableness, of drawing sharp lines in the medical specialities than the modern treatment of iritis. Time was when an iritis stood out as a pathological entity; when the oculist saw case after case of iritis, most of which he made fit into the six categorical etiologies, and those which did not were classed as idiopathic. This last class does not exist today, and most of the others have suffered a second etiologic birth. "Idiopathic" is a term which can not walk abroad today without having the finger of scorn pointed at it, and deservedly. "Idiopathic" and "neuralgic" are nothing more than a confession of ignorance of the real etiologic factor, and these terms should be expunged from medical nomenclature.

To use Beaumont's words: "The dethronement of irido-cyclitis from the position of an independent disease to the secondary one of a complication" places the modern aspect of iritis before us in the tersest form. The specialist of today is no longer a court of last resort, but a medical counsellor, an assembler of cohorts, one who calls together all the medical military to discover the enemy's lair, rout him out of it, and destroy him. If what I have said is true about such a small part of the body as the irido-cyclon, how much more will it be true about the larger parts of the body, whose diseases have seemed obscure to us, and have, hitherto, been looked upon as local pathologies, induced by local causes, and presenting local pathologic pictures which were considered individual, instead of participants in systematic disorders. In the light of newer medical thought there is no such thing as a strictly local pathologic process, if we except trauma and subsequent infection.

In regard to irido-cyclitis (I had better said uveitis, for I assume that we all accept the fact that there is no such thing as a strictly localized iritis, but that in all cases where the iris is inflamed the entire uvea is affected to a more or less marked extent), there are certain old-time etiologic factors that are still recognized: syphilis is the most frequent offender and tuberculosis, while not a frequent cause, is well worth consideration. The old designations "rheumatic and gouty" have been put under the ban. They died a hard death, but their decease was welcome to the medical community. Just as the term "black cataract" was shown by the opthalmoscope to be a blanket term for a myriad of conditions, so has modern research shown that the terms "gouty" and "rheumatic" are but slipshod expressions to designate pathologic conditions requiring really a large number of other descriptive terms.

What has worried the oculist most in the past has been the frequent recurrences in cases of irido-cyclitis. The patients whom he has safely seen through one attack remained well a longer or shorter time only, to again present themselves with a recurrence, either in the same eye or its

*Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 20th, 1916.

fellow. On again with the warm bathing, atropine, leeches, subconjunctival injections, mercurial ointment, salicylates, etc., only to enjoy a brief respite, when the whole train of symptoms presented itself again. This forced him to accept some permanent dyscrasia, such as "gout or rheumatism," or some so-called local tendency to inflammation, the "idiopathic," and he was satisfied with combating the local manifestations, and folded his hands in pleased content when the eye had consented to become "quiet" again.

Now, however, things have changed. Numerous investigators have forced us to recognize the real causative factors of these repeated inflammations, and to acknowledge that we are shirking our medical duty unless we pursue the enemy unto his last trench, and dislodge him therefrom. The number of investigators in this field has grown to a considerable number, and the literature of the subject has assumed proportions which will astonish those who have allowed the past few years to go by without keeping in touch with the subject. Especially writers in the English language have devoted much time and space to this subject, and, coming before you with this paper today, I do not come with the pretence of presenting anything absolutely new, but with the intention of calling your attention to something that is relatively new, and well deserving of further attention and investigation. One point which I shall insist on further on is the fact that in cases in which gonorrhoea might have been or was suspected, the etiology was allowed by former writers to rest on clinical symptoms, and that the complement-fixation test was not given its proper value. Now, we all know how difficult it is to obtain clinical proof of latent gonorrhoea in women, and how annoying it would be to subject women, especially the very young and the unmarried ones, to genital examinations, especially the very searching ones, necessary to detect an old gonorrhoea lurking in some of the glands, and requiring a most thorough going-into of all the separate parts of the genital tract. With the employment of the complement fixation test we would be saved a great deal of bother in this direction, and the patient need not know that her eye trouble has any connection with her genital sphere, thus saving all concerned a great deal of annoying, and even distressing, explanations. Those who have been in practice for a number of years know that it is not wise to disturb the pool of venereal antecedents by hurling into it the stone of inquiry, especially when the female members of the family are concerned.

While the complement fixation test for gonorrhea was formerly very unsatisfactory giving positive results in only 5% of the cases, the procedure has now been improved by the use of a great number of strains, as much as one hundred and fifty in some places, so that today we can count on 85% efficiency.

Here are three cases in point which have occurred in my practice recently, which will serve to illustrate the great aid that the complement-fixation test can afford one:

Case 1—M. A., aged 14, virgo intacta. This girl had already experienced six attacks of iritis. She had also suffered with "growing pains," and had a slight endocarditis. After she had two recurrences under my care I decided to inquire more particularly into her history, and was informed by the mother that the girl had a vaginal discharge ever since the age of four. At that time the mother had lodging with her a very nice young man, who, when he moved away, left such a nice soft sponge. The mother decided to use this sponge in cleansing her little girl's genitals, and soon after noticed the vaginal discharge, to which she paid small attention, as so many young girls have similar discharges. The discharge has long since lessened to such an extent that but little of it can now be seen, and that only at long intervals. A complement-fixation test proved positive, and injection of mixed Neisser serobacterin acted like magic on the third attack of iritis, the eye clearing in two days. This was over a year ago, and there has been no recurrence of the iritis, nor has the patient been troubled with "growing pains"; the heart lesion has also much improved.

Case 2—C. B., aged 26, a woman of loose morals. Eye has been bad two weeks, and has already received treatment. No history of rheumatism, and denies lues. Lost one child at the age of three months and has one child living. Under ordinary treatment the eye recovered from the iritis in two weeks. Then the patient spent an evening in one of the popular restaurants, and the next morning the cornea was steamy, the pupil irregular, and the eye very painful. A test of the blood was made for lues, the report being negative Wassermann. Again the eye recovered under warm bathing, atropine and dionin. This time the patient went for a long automobile ride, and, probably, indulged in other excesses, with a prompt recurrence of the iritis. Each time the eye recovered it was exposed to an insult, so that I saw her through six recurrences in four or five months. I then had a complement-fixation test made, with positive result, and the injection of mixed Neisser serobacterin gave a most brilliant result, but she had only the two milder injections, and then disappeared from my sight for financial reasons. I heard afterwards that she had another recurrence, for which she was treated by a colleague, who was also much dissatisfied with her behavior.

Case 3—Mrs. L. C., aged 40, mother of three healthy children. Some years ago had trouble with her right eye, the exact nature of which I could not determine, as the gentleman who treated her at that time has since died. For one week the same eye had been uneasy, and now presents the picture of a low-grade iritis. Immediate dilatation prevented the formation of synechia, but three days later a moderate amount of keratitis punctata, or serous cyclitis, declared itself, the vitreous became hazy, and the vision sank to distinguishing large objects. As the patient gave a history of numerous mild attacks of rheumatism I put her on novatophan. The cloudiness of the media increased, and the vision kept on sinking. An examination of the blood was then ordered, the report being Wassermann negative, complement-fixation test positive. The patient then received a course of mixed Neisser serobacterins, with marked improvement, even after the first injection. She also received four subconjunctival injections of "sugar of salt." In two weeks the media had all cleared, the sight had improved to 6/9, the so-called rheumatism had vanished, and the eye had become absolutely normal in appearance. When she was dismissed two weeks later the sight had improved to 6/6, and all that remained to remind one of her late trouble were two minute dots on Descemet's membrane.

One striking peculiarity of gonorrhoeal iritis is the occurrence of the disease after a history of

trauma. As an example, Lamb, of Washington, D. C., relates the following case:

A jeweler, aged 32, was struck in the left eye by pieces of glass from a broken vase. Both lids were cut. Three days later he had pain in the eye, and five days later he had a marked iritis, with iris bombé, and tension +3. Investigation revealed the fact that he had acquired gonorrhoea five weeks previous to his eye accident. Instillation of atropin and dionin brought no relief, and the vision sank to almost 0. An injection of sensitized gonorrhoeal bacterin, followed by two others at intervals of thirty-six hours, gave almost instant relief. The night before the first injection was given the patient wanted the eye out; the next day he was seeing with the eye.

Posey records a case of uveitis of metastatic gonorrhoeal origin, in which the results were quite unlike those in the preceding case, but the history of the case allows one to doubt his etiologic assumption. The patient had gonorrhoeal urethritis twenty years previously followed by various urethral complications and "rheumatism" affecting most of the joints of the extremities. Antigonorrhoeal bacterins were used without avail, although a synovitis that appeared at the right knee coincidentally with the ocular inflammation yielded rapidly to the injection. Despite active local and general treatment the cornea rapidly melted away, perforation occurred, and enucleation of the eye was demanded. The whole thing does not seem like a gonorrhoeal uveitis, as we shall see later on.

Wendell and Reber, relating three cases of gonorrhoeal uveitis, treated with mixed Neisser serobacterins, report that one case came on after a long railroad journey, and one after an automobile ride. Formerly we were inclined to call these cases idiopathic, or rheumatic, but in the light of modern knowledge we must admit that their etiology is entirely different, and thus acquire a more satisfactory therapeusis. As Small says: "There is satisfactory evidence, both clinical and bacteriologic, that the vast majority of cases of iritis (iridocyclitis) are caused by microorganisms or their toxins." Again, Reber says: "Clinically we cannot, with any certainty, predicate the etiology in a given case of iritis."

Sidler-Huguenin reports fourteen cases of metastic ophthalmia, twelve of which were undoubtedly due to gonorrhoea. In five of these cases gonococci were found in the blood, and in six pure cultures were obtained from the aqueous humor. Nine were cases of metastatic irido-cyclitis, three of bilateral metastatic gonorrhoeal conjunctivitis. Cobbledick maintains that there is a typical gonorrhoeal iritis, which is characterized by an intense injection of the conjunctiva and sclera, with rather a bright cornea, and absence of exudation of cellular elements into the anterior chambers and of posterior synechiae. This is an entirely different picture from that dsecribed by other observers, who mention a jelly-like exudate almost entirely filling the anterior chamber as one of the most striking symptoms of gonorrhoeal uveitis. Cobbledick admits that gonorrhoeal uveitis may be protean in its presentations, and claims, as do other observers, that it is the most favorable type of uveitis as to its ultimate outcome. While I do not accept Cobbledick's typical picture of gonorrhoeal uveitis, I do agree with him as to the fortunate termination for those cases in which the etiology has been recognized. As Cobbledick says: "While there are some cases of gonorrhoeal uveitis which have shown themselves very obdurate, the number of these cases has grown much less since the introduction of the use of vaccines and serobacterins." I also agree with his generalization that gonorrhoeal iritis is, as a rule, unilateral; whereas, syphilitic iritis is usually bilateral.

For several years H. Guillery, of Cologne, has been publishing in the *Archiv fuer Augenheilkunde* the results of his experiments on rabbits with the ferments of bacterium prodigiosum injected intravenously, and in his last report, 1915, he gives us the history of some of the animals, in whom he was able to produce as many as seven attacks of uveitis, of more or less marked severity, after these injections. This is proof that even a non-bacterial noxa working from a distance can produce these recurrent attacks of uveitis, and that a body-wide search should be instituted to discover the agent causing these recurrences. Mansilla tells of a case in which there were fourteen recurrences of a gonorrhoeal iritis. Some of us could, no doubt, count as many recurrences in some cases, but we do not signify the exacerbations with that name, but rather consider that the eye is in a continuous state of low-grade inflammation with occasional spells of quiescence.

A very interesting article in this matter is that of C. Goulden, in the Royal London Ophthalmic Hospital Reports for 1914, on "Infections of the Uveal Tract Secondary to Inflammations of the Mucous Membranes." According to Goulden, uveitis may be secondary to an inflammation of almost any part of the mucous membrane tract. That the tonsils should be carefully inspected in all cases of uveitis is shown by the recital of the following case of Goulden:

J. F., aged 46, had misty eyes for twelve months. For five months he was treated by ordinary methods without improvement. The teeth were good. The vision of the right was equal to 6/12, that of left to 6/36. Six months later the tonsils were found to be diseased, and were treated, with immediate improvement of the eyes. Six months later the patient again had a sore throat, and the vision of the left sank to 6/36, the vitreous showing numerous opacities. The tonsils were again treated, and the vision was soon restored.

The typhoid bacillus has been cultivated from the eye of a patient who had an attack of iridocylitis following a typhoid. In puerperal sepsis the eye is especially susceptible to a metastatic panophthalmitis. In some cases streptococcus has been grown from the eye fluids, and pneumococci have been found in the bloodstreams. A. Netter describes a case in which a suppurative irido choroiditis was due to meningococci. Speaking of the tonsils as offenders Ulrich says: "Experience with alveolar infection in which systemic symptoms were present has made us very cautious concerning the apparently innocent-looking tonsil. Invariably, on closer inspection, and, particularly, after it had been removed, under protest by the throat specialist, this

same tonsil has proven our suspicions correct. In one case the operator confessed that he had found the foulest accumulation of pus he had ever encountered behind one of these innocent-looking tonsils, and the long-standing inflammation of the eye of the same side subsided almost immediately after the removal of the tonsil, never to recur.

A fact that has been noted in a number of cases is the alternation between furuncles and uveal tract diseases. The frequent occurrence of uveitis in influenza has been noted by Reber. Brawley cites two cases of Lawford, in which peculiar corneal disease was cured by vaccine recovered from the urine, a cystitis being present. In ptomain poisoning we have mydriasis, disturbances of accommodation, and paralysis of the extrinsic muscles, showing the strong affinity of the toxins elaborated by the intestine tract for this part of the body.

As to the treatment of syphilitic uveitis, but little need be said, as the frequency of that kind of uveitis has led to a well established diagnosis and therapy. De Schweinitz well says, that many fear the effect of salvarsan on the eye on account of the disagreeable experiences with atoxyl, and he, as well as others, are much in favor of administering full doses of the arsenical preparation in luetic eye conditions. Sambuc, writing from that far-off country of Indo-China, where they are supposed to produce a particularly virulent type of syphilis, describes a case of syphilitic iritis, which had stoutly withstood the mercurial treatment, but yielded rapidly to arsenic.

The question whether it is wise to subject an eye that is already inflamed to the action of arsenic has been answered by most of the observers in this way, that if the inflammation is undoubtedly syphilitic one should not hesitate to give arsenic. And, furthermore, should the eye grow worse after the first injection, one should give a second injection. Some forms of uveitis, especially that form which is associated with late-occurring parenchymatous keratitis of inherited syphilis, do not do well with salvarsan, but are better treated with mercurials, iodides and roborant treatment. Huelp says that the only contra-indication to the use of salvarsan is the presence of a non-syphilitic retinitis or optic neuritis. Its quick action makes it invaluable in preventing the death of valuable nerve elements which, once lost, can never be replaced from any other source. The quick action is also a valuable characteristic of the bacterins; many have recorded their almost magical action, a small dose sufficing in a few hours to cut down pain and inflammation.

As to subconjunctival injections, the use of the mercurial salts for this purpose never gained much favor in this country, owing to the intense pain they cause, even when mixed with analgesics. The only drug that I have used continuously is the solution of sugar of salt, the composition of which is jealously guarded by a San Francisco druggist. Dr. W. A. Martin called my attention to this many years ago. It gives very little pain, and the results are all that could be asked for.

In this connection I would like to cite the very appropriate remarks of one of the writers on this subject: "The sources of infection may arise from various regions in one and the same subject: sinuses, teeth, intestinal tract, etc., and, therefore, the discovery of a single focus of infection, for example, at the root of a tooth, or in a tonsillar crypt, should not check the search for septic areas elsewhere in the body." Moreover, even if iridochoroiditis is definitely due to syphilis, the removal of a focal infection, for instance, in the tonsil, ethmoid, or gum, is sometimes necessary to procure rapidly the best results from anti-syphilitic treatment. A case is cited in illustration: "A man with acknowledged luetic history, and the usual secondary manifestations, such as sore throat, etc., prior to his eye inflammation, received antiluetic treatment, salicylates, intestinal antisepsis, all with small help to his eye. After clearing out some pus-pockets in his ethmoids the ocular inflammation subsided with startling rapidity. The nasal focus may have been the real cause of his secondary eye-condition, and the other conditions merely coincident."

This brings us to a consideration of the causative role played by nasal conditions in inflammations of the eye in general, but I feel that we can pass this over with small loss of time, especially as the subject has been so well worked out since Ziem, of Danzig, first drew attention to the subject, and rendered this a field for such brilliant results.

Of late the teeth seem to be the pathologic pet, and, of course, ophthalmology saw fit to embrace the popular idol. Just how much the teeth are entitled to this amatory embrace, remains to be seen, and one thing which seems to call for caution, before setting this focal fiend on the pathologic pedestal, is the remark by Black of London, that 50% of all persons having teeth present either irritation of the vital pulp of the teeth, or an abscess at the root apex, or pus pockets alongside the root. If such be the case we would have to accept the teeth as focal inciters in one-half of the cases of uveitis, and strong proof would have to be brought to prove them really guilty. Allport, in the *Dental Review* for 1904, says that: "The pus pockets alongside the roots may, or may not, be discovered by the radiograph. These pockets frequently involve but one side of a root, or the same side of several roots, and, if the destruction is only on the labial or lingual side, the density of the root may obscure the destruction of the alveolar process. The general appearance of the soft lesions is not a safe guide, as the anterior surface and gingival margins may appear normal, while the surfaces adjacent to the teeth may be much roughened. Gilmer also says that chronic alveolar abscess is present in 25% of all mouths, and that 25% of all adults have chronic suppurations beginning at the gingival margins. While these figures may be correct for England, where the dental conditions are notoriously wretched, as anyone who has lived there can testify, I do not think they will apply to the United States, where the teeth receive more attention than they do in any other part of the world. That,

however, there is a great deal of truth in the dental origin of uveitis, is borne out by numerous observers. In the last meeting of the Eye and Ear Section of the San Francisco County Medical Society, Dr. W. F. Blake described a case in which relief of eye symptoms was quickly afforded by the opening of an apical abscess. Todd and de Schweinitz report several similar cases, in which the opening and sterilization of small abscesses at the roots of the teeth gave cause to the recurrences of iritis. Already in 1879 Nettleship pointed to diseased teeth as the possible origin of uveitis, and Lang thought that pyorrhœa alveolaris was the source of sepsis in one hundred and thirty-nine cases out of two hundred and fifteen cases of eye inflammations attributable to sepsis.

There is a rather lowly disturbing factor in these considerations, and that is the matter of money. To arrive at a correct diagnosis means that the patient must pass through several hands. Our collaborators in the laboratory, while great sticklers for scientific precision and accurate findings, are not in the field for glory alone. A thorough examination is, therefore, restricted to institutional and well-to-do patients. For the person of moderate means, the other expenses of sickness, the loss of work, etc., make such an expensive procedure a thing almost unattainable.

Discussion.

M. W. Ward, M. D.: Ten years ago yesterday I read a paper before this section of the State Society, touching on the subject now before us, under the head of "General Diseases as a Cause of Diseases of the Eye." My paper was the only one that was presented before this section at that meeting that was saved from destruction by the "quake," due to the fact that I had not turned it over to the secretary that day.

In that paper I made the statement that three-fourths of all diseases of the iris, ciliary body and choroid, or in other words, three-fourths of all diseases of the uvea were due to syphilis, inherited or acquired. Three-fourths of the remainder due to gout and rheumatism and the balance to toxic and other causes such as gonorrhea, etc.

That was the teaching at that time and I would like to hear it compared with the teaching of to-day.

V. H. Hulen, M. D.: I should like to mention just one point in the modern treatment of iritis not referred to or not read by Dr. Fredrick, illustrated by a case I saw recently in consultation with two other physicians. The patient was suffering from an acute and extremely severe case of uveitis. By exclusion a bad tooth was suspected as the inciting cause. A dentist confirmed our suspicion and treatment of the diseased tooth was followed by a fairly magical recovery of the eye which had seemed almost on the point of disintegration.

H. G. Thomas, M. D.: We are inclined to find one cause and stop with that. Dr. E. V. L. Brown of Chicago reports a case which had recurring attacks of iritis in which they found lues, old gonorrheal infection, a tubercular condition, and an especially nasty condition of pyorrhoea.

In our clinic in Oakland we scan each case carefully and find a great many due to pyorrhea. Dr. Fredrick has combed the whole situation thoroughly and has searched for the focal infection in all of the cases.

M. W. Fredrick, M. D., closing: In regard to the percentage of cases of iritis, the statistics vary greatly; however, in all statistics a large percentage are due to syphilis, a smaller proportion to tubercular infection, while a relatively large number are due to gonorrhea. I tried to impress it upon you that we are not to accept the diagnosis of rheumatism in regard to iritis any more, but we must look for a focus.

As to the kind of vaccine I use, I find in gonorrheal cases that the mixed-Neisser works very well. The autogenous vaccines are very good if you have the time and can find the material to culture it from.

I take exceptions to Dr. Thomas' statement that I have combed the whole situation with a fine-toothed comb. I have merely raked it over lightly. Dr. Blake, in a recent meeting of the San Francisco County Medical Society, recited a case in which a man had a tooth extracted and recovered from a persistent eye trouble. Black tells us that 50% have pus in the teeth, either at the apices of the teeth or alongside the teeth. The point that should be made here is that even though you do find one symptom you should not be satisfied with that alone, but should look the case over thoroughly and find every possible focus of infection. Treatment of the other foci of infection will cause a subsidence of the prominent symptom.

THE EARLY SURGICAL TREATMENT OF SQUINT.*

By VARD H. HULEN, A.M., M.D., F.A.C.S.,
San Francisco.

For many years the importance of beginning the treatment of squinting children as soon as the diagnosis can be made has been recognized. To Claud Worth great credit must be given for the prominence and importance of the early development of vision, and fusion faculty in cross-eyed infants. Much good has been accomplished by the early non-surgical treatment advocated, but I believe it a mistake, when squint cases are not thus cured, to postpone the surgical treatment until the patient has passed the age of six or seven years, as has been rather generally advocated. Dr. Reber, in the *Pennsylvania Med. Journal* for May, 1915, says: "14 to 16 years is the ideal age to operate squint." We agree that surgery must be the last resort, but this should not mean that it may be postponed indefinitely. It is just as grave a mistake to begin the surgical treatment too late, as it is to postpone the non-surgical treatment.

To review briefly the handling of squint, in the case of a young child, and by squint I mean all varieties of constant strabismus though in this article I shall have cross-eyes especially in mind. First, the error of refraction must be carefully estimated, and fully correcting lenses prescribed. This can be done when the patient is as young as six months of age or even earlier. Then the amblyopia, if any, must be detected and every effort given to the development of vision in the defective eye by means of atropin and the exclusion methods for the other eye. This may occupy us until the child is three or four years old. At this age we are usually able to determine the absence of the "fusion faculty." Then a few weeks of

* Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 20th, 1916.

intelligent and persistent efforts with the amblyscope, stereoscope, diploscope and bar reading should fully develop binocular vision if such is possible. By giving such prompt and consistent attention to young squinters, we usually have exhausted the possibilities of non-surgical treatment some time before the child has reached the age of six years. If the patient has ceased to show any improvement, and still squints, I would advocate prompt operation. As a rule alternating strabismus should be operated upon at first sight. Again, when the vision has been corrected as far as possible, but no fusion power can be acquired, the sooner we operate the better, hoping by the parallelism thus attainable that the normal functions of the eye may be developed before it is too late. Or where no effect has been secured by a fair trial of all non-surgical treatment, I would advocate operation without delay, regardless of the youthfulness of the child. To dally along until the age for obtaining binocular vision has passed is to me unthinkable.

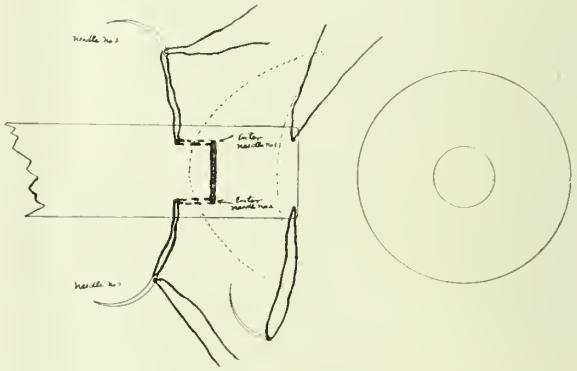
In no case am I able to see serious objection to a resort to surgery no matter how young the child, provided correct and complete non-surgical treatment has been previously given, and I am convinced that it is a highly desirable thing to obtain parallelism before the developing period for the eye has passed. We should not permit the parents of the child to postpone correct operative procedures indefinitely as so often occurs.

This early surgical treatment, in my opinion, can be safely done only by some form of "tendon tucking." Tenotomy is certainly not advisable in these immature cases, and no method of advancement, or shortening, is entirely safe whereby the tendon is cut loose from its attachment to the globe.

My method in these cases of very young children, or when the muscle is especially small, is quite similar to the one I described in the *Journal of the American Medical Association* for July 9, 1910, page 123, for shortening or advancing an ocular muscle. A reading of that article is necessary for a full understanding of the details and advantages of this modification. A general anesthetic being necessary in all very young patients the reserve sutures (first used as tractors) are exceptionally necessary here for the best results.

Reference to the two accompanying diagrammatic illustrations will render much description of the technique of this operation unnecessary. Instruments required: a speculum, tenotomy scissors, muscle advancement forceps, fixation forceps, tenotomy hook (with straight right-angle), needle-holder, and two separate sutures. One suture of No. 6 black iron-dyed twisted silk, 18 inches in length, with No. 26 full curved sharp, flat needle threaded to its middle; the second suture should be a double one, composed of a white and black No. 6 silk, each end of which is threaded into one needle, making a double suture 14 inches long with a needle at either end.

The speculum is introduced, the assistant brings the operative field to the front. Conjunctiva and tissues down to the tendon are pinched up, incised vertically just posteriorly to the insertion of the tendon, the incision is extended upwards and downwards. It is usually advisable to excise a crescentic piece of this covering to the muscle. These tissues are separated towards the cornea and also freely in the opposite direction. Next the tendon is loosened along the upper and lower margins and clamped close to its scleral insertion with the muscle forceps, the better to control the globe while accurately placing the scleral stitch vertically as shown in figure one, the black suture with the single needle is used. In extreme cases I insert this suture in the sclera close to the limbus, sometimes making a double entrance as it were to broaden its bite. In most cases it is passed firmly into the tendon insertion. In making this stitch, the conjunctiva is first entered above from without inwards then into sclera and out through conjunctiva below. Draw the suture through to its middle and cut off the needle.



To insert the muscle suture take off the clamp, the assistant lifts up the muscle on the hook, fix one needle of the black and white suture in the holder and penetrate the muscle at one-third its width from the upper edge from without inwards 4 mm. anterior to the point we intend to bring forward to its final fixing point, and draw the suture through to its middle; with the same needle again enter the muscle from within outward four millimeters directly back of its first insertion, come out picking up tendon, capsule and conjunctiva over site of exit. Now take the other needle of this same suture, and duplicate this stitch through the lower edge of the muscle (see Fig. 1), and slip off the needles.

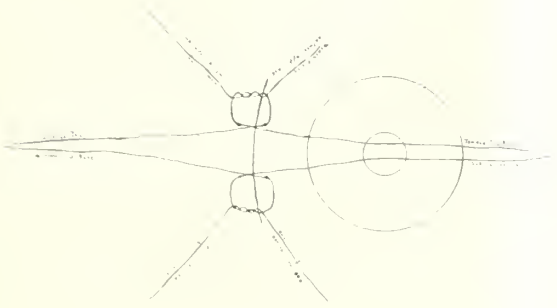
It is evident that we now have two separate sutures, in same insertions in sclera, and also in the muscular tissues. One from each of these is crossed and used on this occasion as traction sutures only. By use of them the assistant has perfect control of the relative position of globe and muscle, and when he has brought the eye to the exact position required, the operator ties the upper ends of the other pair together, and then the lower ends together, making the fixation perfect (see Fig. 2), and the muscle has thereby been folded smoothly on itself.

The traction sutures are left in situ at least until the following day. Then if the squint has been found on recovery of consciousness to have been materially over-corrected, the tied sutures may be easily removed, and remaining traction sutures similarly tied to hold the correct position.

In suitable cases both eyes may preferably and safely be treated surgically at the same operation.

In my operation as described six years ago, the muscle suture had traction on but one thickness of the muscle, and I have rarely found any giving of the tissues, but at least one writer, Dr. Wm. F. Hardy, in the *American Journal of Ophthalmology* for December, 1915, page 353, speaks of this possibility. The doubling in the modification just described, is but little more complicated and eliminates any such objection.

Many details and practical points are here omitted, as they are common in all similar proceedings or are self-evident.



For brevity I have confined this contribution to two points. First, to lay stress on the desirability of operating on certain squint cases early, certainly before the age of six years, in fact at any age after the non-surgical treatment has been conscientiously and adequately employed to the point of no further progress. Remembering that the time for obtaining the valuable binocular vision is usually limited to the first five or six years of life. This, so far as I know, has not been definitely advocated before. And, secondly, to describe a simple, accurate and efficient operation for safe use in these cases.

Discussion.

Wm. H. Dudley, M. D.: I have used various operations in the last twenty years. The Knapp operation was used mostly in the hospital and usually the results were very good. Once in a while, however, there was an under-correction or an over-correction. The operation according to Worth, I have found, more satisfactory and have used it for quite a number of years and like it very much, but on reading the previous discussion of Dr. Hulen's operation, I was very much attracted to it. It seems to me that his tuck in the tendon has advantage in certain ways, over any tucking operations I have seen. The retaining suture which he has, is an advantage, as he can adjust the muscles after a few days, and on that account is better than any other I know of. Under ether the eye stands anyway after the operation, but if we have an arrangement by which you can adjust the muscles later, when the patient is conscious and the eye assumes its proper position then I think we have an element in this operation that stands ahead of anything I have seen.

The Todd tucking operation, which has been used so extensively, for many years, leaves the tuck standing out, and requires much more time to become absorbed than Dr. Hulen's tuck which lies buried beneath the shortened tendon.

H. G. Thomas, M. D.: We will look back a few years, and remember the bad results of practically all the old tenotomies, we will understand why the modern methods of tendon advancement are slow in being taken up, and recommended by the general men, because so many of the over results of the old tenotomies are still with us. So, therefore, I think we should not blame any one, or call them criminally careless, because the specialists have not taught tendon advancement long enough.

The main idea to-day is the early operation, which I believe in and advise. Dr. Hulen's operation is a marvel of ingenuity, but if you have seen the O'Connor operation you have seen the simplicity of it. There are no stitches to be removed at all.

Kaspar Pischel, M. D.: I would like to ask one question. What becomes of the tucked tendon? Have no experiments been made upon animals to find out the ultimate anatomical result of tucking of tendons?

Closing Remarks: V. H. Hulen, M. D.: While Dr. O'Connor's operation is original and very ingenious I cannot think of it as a practical operation for accuracy in execution or safety in estimating results, requirements so necessary in squint and all ocular muscle work. One can get a beautiful demonstration on a broad and fixed object like a saddle girth of this twisting or quilting suture, but when we have to deal with small, narrow ocular muscles with their varying tensions and fragility, Dr. O'Connor's suture would surely be extremely difficult to place and definite results in many cases it would seem to me, to be out of the question. Also my experience with catgut in eye muscle work has been most unsatisfactory.

Roderic O'Connor, M. D.: In regard to irritation by catgut, I used chromic catgut in one case and the resulting reaction was extremely severe and lasted several weeks. For that reason I always use Lukens' 20-day tanned non-iodized gut. Plain gut would probably remain long enough to answer all purposes, but I have never tried it.

As to looping the tendon, I do not loop the entire tendon, but only a narrow band on each margin, which, together, are strong enough to take the full action of the muscle during the healing period, and so relieve the suture holding, the remaining central section from all tension, thus preventing any loss in effect from cutting through of the sutures, so common in all other methods. There is nothing to fear from an over-correction, for the two opponents are now strong, and by pulling in directions diagonal to each other, the globe is acted upon on the principle of the parallelogram of forces, and recedes into the orbit compressing the orbital fat, till a point of balance, determined I believe, by the desire for binocular vision, is reached. Many of my cases show an immediate under effect, but in practically all, this disappears, and it increases during the healing period. I explain this as due to temporary paresis from stretching, not relieved by a tenotomy of the opponent. As the opponent gives way to the increased tension of the operated muscle, and as the latter regains its power, the effect naturally increases. The point of the operation is, that it does away with all constriction, with the attendant cutting and loss, unavoidable in all the methods depending upon sutures and ligatures.

TUMORS OF THE KIDNEY.*

By H. C. MOFFITT, M. D., San Francisco.

Three questions are not infrequently raised by the history or examination of a patient:

I—Do certain symptoms suggest a kidney tumor, and of what weight are they in the diagnosis?

II—Is an abdominal mass a tumor of the kidney or of some other organ?

III—Do certain general or distant signs point to a kidney tumor, or do they help decide the nature of a questionable abdominal mass?

I. *Symptomatology.* The importance of good histories in diagnosis still needs emphasis. The patient may tell of the tumor he has noted, but usually certain symptoms he details direct attention to the abdomen or kidneys.

1. *Hematuria* is of prime importance and any history of blood in the urine demands thorough investigation. Symptoms and the cystoscope will usually decide whether the bleeding is from the bladder. The common causes of bleeding from the kidney are stone, tuberculosis and tumor. The bleeding of nephritis should be capable of recognition and we should look askance on diagnoses of vicarious or essential hematuria, until cases have been most thoroughly examined. Bleeding is a common symptom in tumor and often the first. It may be frequent, or at intervals of months or years. It may be small, or profuse and deadly. It occurs frequently without cause, but may follow exertion or trauma. There may be no pain, or severe attacks of colic, due to passage of clots down the ureter. Small worm-like dots have been regarded as particularly characteristic of neoplasm by Israel, but in my experience they are most often absent, and may occur in bleeding from other causes. Occasionally one obtains a history of hematuria in abdominal tumors not of kidney origin, but the occurrence is rare, and, in a doubtful case, hematuria should decide almost certainly for kidney neoplasm. Recently an unusual case of enlarged spleen was to be sent me for examination, there was a history of hematuria and the suggestion to examine the mass more carefully led to a change of diagnosis to kidney tumor. Microscopic blood in the urine is of much less significance than frank bleeding, it has been observed in a number of our abdominal tumors not of kidney origin. Apart from hematuria the findings in the urine are not usually important. Large, irregular polymorphous cells have been found in two of my cases. Polyuria may occur, albumen may be due to pressure on the renal vessels. Last year in the University of California clinic we had a case of infected carcinoma of the kidney with pus in the urine. A few leucocytes in the sediment are not uncommon, but in my experience, pus in any amount is most unusual and should suggest tuberculosis, pyonephrosis, pyelonephritis, or infected cysts rather than tumor.

2. *Pain.* Pain, like hemorrhage, may long precede other symptoms or signs of tumor. In one of my cases, pain in the right loin and thigh, was noted six years before hematuria, and the recognition of the renal tumor. The pain may be dull, or neuralgic, colicky and extremely severe. Intense pain may accompany hematuria or be caused by hemorrhage into the tumor. Pain may be local, and is then of great value in determining the affected side, or it may be referred to the epigastrium or sacrum. It occurs more frequently with tumors of the upper kidney pole. It radiates not uncommonly in the areas of distribution of the ilio-inguinal or genito-crural nerves, more rarely of the lower lumbar and upper sacral nerves. Pain in the testicle has been so persistent as to lead to castration without recognition of the renal tumor. Pains in the extremities—arms as well as legs—may be persistent and may disappear after removal of the tumor, but any distant pain should awaken suspicion of metastases. The areas of hyperalgesia of Head have been of no assistance to me in diagnosis. The pain of hydro- or pyonephrosis or of renal neoplasm may, in my experience, frequently be referred to the epigastrium and lower abdomen and, when associated with anorexia, vomiting, flatulence and distension, is falsely interpreted as meaning stomach, gall-bladder, appendix or pelvic disease. Braasch from the Mayo clinic, in writing of hydronephrosis, notes that in 46 cases 44% had previously been operated upon elsewhere for other conditions erroneously thought to be the cause of the abdominal pain.

3. Polyuria and bladder symptoms may occur with neoplasm as with other renal disease, but they are rarely of importance in diagnosis.

II. *Tumor.* Hematuria and pain or distant symptoms or signs may demand search for a possible kidney tumor, or a tumor of the abdomen may be noticed by the patient, or found on examination, and the question is raised, is it of kidney origin? Judgment in regard to abdominal tumors still remains difficult despite all modern helps in diagnosis; in fact, the multiplicity of available tests and methods of examination is often confusing rather than helpful. Careful palpation of the abdomen, frequently repeated, with charting of the various organs or masses palpated, together with the size, shape, consistency, mobility of such masses must continue to be the most important method of differentiating abdominal tumors. I would emphaize the advisability of *repeated* examinations; an abdomen may be difficult to palpate one day and easy the next, dependent upon the patient's nervous condition quite as much as upon variations in content. This is particularly evident in consultation work. In palpating abdomens have the room warm, the patient warm, your hands warm. In palpation of normal kidneys, or in detection of small kidney tumors, it may be of advantage to have the patient half sitting, or turned on the side with trunk and thighs bent toward each other. Bimanual palpation is of great importance. Hot poulticing or a hot bath, greatly helps to

* Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 20th, 1916.

relax muscles; examination under ether is not often necessary or advisable. In fat patients it may be very difficult to determine anything about the deeper abdominal regions; it is especially difficult to separate kidney tumors from enlargements of the liver or spleen. Normal kidneys may vary much in size and shape and in thin patients, or in cases of marked enteroptosis, it is wise to hesitate with the diagnosis of abdominal tumor. A long kidney in thin patients may be taken for an abnormal kidney with tumor in the upper pole. One kidney may be much larger than the other, both to palpation and by x-ray without tumor, tuberculosis, hydronephrosis or cystic disease—probably because of differences in blood supply. Movable kidney on the right may be unusually movable and may lie transversely. Several times in cases of former large left sided pleural effusion during which spleen and left kidney were pushed down I mobilized or in chronic splenic tumors, I have felt unusually shaped masses in the flank made up of the displaced spleen and kidney. In women, less often in men, the right kidney may be magnified in size when felt through a thickened or distorted right liver lobe, and may simulate a tumor. On the other hand, one is frequently surprised at operation to find a tumor of the kidney much larger than clinical examination had indicated. I have had two tumors of the kidney that could not be palpated, and in 12 out of 91 operated kidney tumors from the Mayo clinic, no tumor was palpated clinically. In this group, and in small tumors of doubtful renal origin, diagnosis must be based upon cystoscopic examination, determination of renal function and pyelography. It must be remembered, however, that in nearly 25% of tumors functional tests will not show insufficiency. Very large renal tumors may be mistaken for other abdominal growths on account of lack of mobility, dislocation of other organs, disturbance of the normal relations with colon and liver, or from production of unusual symptoms, as jaundice, obstruction of the bowel, pressure on the duodenum and on the vena cava, etc. The very large renal tumors of childhood rarely cause pain or hematuria but usually their recognition is easy as other abdominal growths are rare at this age. Apart from the enormous tumors of childhood, very large cystic kidneys, or large hydro- or pyonephrotic sacs, enlargements of the kidney comparatively rarely extend across the mid-line of the abdomen or into the pelvis. At times there is definite bulging of the hypochondrium, or ribs or loin. Localized distension of veins is rarely noted. Of greatest importance in the recognition of renal neoplasms is the fact that no matter how great the enlargement or what its nature may be the rounded kidney shape is more or less preserved. Definite edges or shelves are rarely palpated. Ballottement from the flank is an important characteristic, though it may be absent in fixed kidney tumors, and may be demonstrated at times in tumors of the liver, spleen or colon. Occasionally in tumors growing chiefly from one pole the kidney may be outlined as an appendage to the main mass. Pulsation of a tumor in the flank should suggest hypernephroma, but it may occur in aneurism or retroperitoneal sarcoma. Systolic or continuous bruits may be heard over enlarged livers and spleens as well as over renal tumors. The mobility of kidney tumors may be considerable even apart from tumors that occur in freely movable kidneys. Movement on respiration frequently occurs and even considerable excursion should not decide for hepatic or splenic rather than renal origin.

The fact that tumors of the kidney lie deep in the flank, and in their growth carry the colon in front of them, is important in diagnosis. The colon, especially on the left side, may be felt crossing the tumor, or may be demonstrated by inflation. Absolute reliance must not be placed upon this sign, as I have wrongly ruled out a tumor of the kidney, and called the mass spleen because the colon lay wholly along the anterior border. Moreover, the colon will lie across a retroperitoneal sarcoma in just the way it crosses a kidney tumor. Rarely the kinking by adhesions of a colon, crossing a kidney tumor, will cause obstructive symptoms and suggest a primary colon growth.

It is humiliating that even with care, mistakes in diagnosis still occur; mistakes occur more rarely, however, since the urologist has come to our help. In my own experience with tumors, more mistakes are made in referring a tumor of kidney origin to another organ than in assigning other tumors to the kidney. Tumors of the liver, spleen, colon and retroperitoneal structures most often cause confusion.

1. *Liver.* It has been noted above that a kidney felt through an abnormal right liver lobe, may appear much larger than normal. I have been surprised at operations for gall-bladder disease to find that a mass, thought to be liver, was really a kidney anchored low, and that the mass in the flank thought to be kidney, was really a plump right liver lobe. In certain cases of tilted liver, or of abnormally shaped or thick right lobes, the liver mass may be diagnosed as a kidney tumor. I have seen this mistake made a number of times, and have made it twice myself, though I have had the possibility well in mind for years through the experiences of Bright, Osler, Rolleston and others. We have now a most interesting woman in the University ward with enlarged spleen and liver, and a marked secondary anemia without, however, the leukopenia of Banti. When she first entered it was a question whether the anemia should be referred to Banti, to unnoticed intestinal hemorrhage, or to a mass in the right flank, possibly a kidney tumor. Despite a definite undercurrent of uncertainty about the mass it was finally decided to be a kidney tumor because of the position, size, the apparent separate mobility from the liver, and the inability to feel the right kidney. Cystoscopic examination showed normal ureters, normal urine and no diminished function on the right side. The pyelograph, however, showed a small and deformed pelvis which Doctor Hinman thought best explained by the assumption of a renal growth. With the uncertainty as to the nature of the enlargements of spleen, liver and kidney, it was thought best to

explore the abdomen. At operation the right kidney was normal, and wedged high up by an unusually plump large right liver lobe, which had been taken clinically for a kidney tumor, the pressure on the renal pelvis explaining the abnormal pyelograph; the nature of the splenic and hepatic enlargements is even yet not satisfactorily explained. Abnormal tipping of the liver may often be recognized by the unusual line of dullness above, lung resonance extending abnormally low in the axillary lines and this is further accentuated in the left decubitus. Corset liver lobes when plump, rounded and nearly detached from the main liver mass are sometimes very difficult to interpret, especially when they occur in men. X-ray plates may determine their nature, and show a separate kidney shadow; plates taken after inflation of the colon may outline liver and spleen still more clearly. Distended gall-bladders, especially when fixed by adhesions, may simulate kidney tumors, but they nearly always are more superficial, swing differently, and can be brought into relation with the liver edge.

In a number of instances I have seen hypernephromata wrongly diagnosed as liver tumors. In two cases a history of hematuria should have corrected the diagnosis. In a man seen years ago, a large hypernephroma had grown chiefly upward, tilted the liver down, and to the left, and so narrowed the cava just below the diaphragm, as to enlarge the liver generally. It is well to bear in mind that this enlargement of the liver, from dislocation and engorgement is not uncommon in hypernephromata.

2. *Spleen.* Enlarged spleens are common clinical findings in California. As a rule an enlarged spleen is easily recognized by its superficial position, direction of enlargment, edge, notches and respiratory mobility. Sometimes, however, enlarged spleens are plump, unduly movable from the flank, and lie deeply, or become tilted forward so that the edge is no longer readily felt. Sometimes enlargement is transverse, rather than diagonally downward, and inward, and one feels peculiar horizontally-placed cakes in the epigastrium. The vertically placed, elongated, rounded spleens, with nearly parallel borders are the most confusing. Apart from leukemia, splenic tumors are usually associated with leukopenia, while renal tumors, especially sarcomata, may cause high polynuclear leucocytosis. In 1905 Doctor J. M. Read asked me to see an unusual case of lymphatic leukemia. The irregular quadrilateral shape of the mass in the left flank, the rather rounded edge, the mobility from the flank and the absence of definite notches, although the edge was irregular, decided me to make the note "the mass seems more like hypernephroma than spleen, though it lies so low and the blood count is against it." This view was strengthened by finding a left-sided varicocele which the patient, a man of 72, said had appeared a year before, and had been larger at that time. A blood count showed 4,768,000 red cells, 61,000 leucocytes, hemoglobin 90%; differential count of 500 cells, polynuclears 38%, small lymphocytes 57%, large mononuclears 3.2%, eosinophiles .2%, mast cells .8%. This count suggested but was not typical of lymphatic leukemia and, with the paper of Strauss (Sarcomatose und lymphatische Leukaemie Charite Annalen XXIII) in mind, a diagnosis of hypernephroma with lymphocytosis was made. Under large doses of arsenic the blood picture was unmodified, but the man became deeply and universally pigmented and developed a gangrenous zoster of the left frontal region and scalp. During this zoster, the tumor became much smaller and the edge sharper, leucocytes fell to 4,200. Death occurred a short time after, and autopsy showed a long, slightly nodular hypernephroma of the left kidney, with tumor masses in the renal vein. There were no metastases.

3. *Colon.* In tumors of the colon the history is most important. Stiffening of the bowel and fecal impaction are common and x-ray plates help greatly in diagnosis. Melena and occult blood are important signs but it must be remembered that bowel hemorrhages may occur with tumors outside the bowel and that occult blood may consistently be absent in large colon carcinomata. Massive tuberculomata of the cecum owing to shortening of the ascending colon frequently, lie high in the right hypochondrium. Frequently the normal right kidney may be separated from the colon tumor.

4. *Retroperitoneal Tumors* are not rare. They may have the same relations as renal growths, but they are usually less movable by ballottment. They may cause the same pain radiation but none that I have observed caused hematuria. They may be large, and of the exact shape of a rounded renal growth, or irregular and nodular, if springing from lumbar glands. Functional tests and pyelography are of great value in distinguishing from kidney tumors. I have seen masses of tubercular glands in childhood, retroperitoneal glands of Hodgkin's disease or lympho sarcoma in adults diagnosed as kidney tumors. The fact that large retroperitoneal growths may be syphilitic should not be forgotten. We have all unfortunately seen the massive glandular tumors in the kidney region, that develop so frequently after removal of testicle teratomata. Some years ago I made the diagnosis of a tumor, developing in the upper pole of the left kidney, or left adrenal of a man of 35. There was pain in the loin, groin and left testicle. The testicles were normal. The man became emaciated and deeply pigmented and a tumor developed deep in the abdomen about the upper kidney pole. The kidney itself was pushed down, and the lower half could be palpated, the upper half blending with the tumor. I had no hesitancy in urging operation during the early months of the disease. Fully a year later, swelling of the left testicle was noticed for the first time. It soon became apparent that this was a tumor of the testicle and not a varicocele, and that the tumor of the loin was secondary and not primary.

After an abdominal mass has been recognized to be of renal origin, it remains to determine its nature. We have to distinguish neoplasms from hydronephrosis, pyonephrosis, pyelonephritis (rarely), tuberculosis and cystic kidneys. Examination of the urine is naturally most important, so is cystoscopy, ureteral catheterization, pyelography. I know from experience that hydronephrosis and

pyonephrosis are far commoner conditions than is generally recognized. The intermittent hydronephrosis of young adults escapes diagnosis especially frequently. The pyonephrosis of tabes is often unrecognized. Multilocular cystic kidneys are likewise clinically much more common than the textbooks have us believe. They may be met with at any age, the last cases seen were men of 60 and 65. The tumors may go unnoticed until uremia occurs, may be discovered accidentally, may become infected and be marked by pyuria and fever, may be brought to notice by hematuria or acute pain like renal colic or may give dull pain in the back or vague gastric symptoms. I have seen bilateral tumors in three members of the same family and several times have seen unilateral infection of a cystic kidney. Tumor may be found only on one side, and yet the condition is nearly always bilateral, so that nephrectomy should not be done unless demanded by extreme pain or uncontrolled infection. I have seen good results from Rovsing's operation—of puncture of the cysts.

III. *General or distant signs.* Frequently in the course of a general physical examination, signs will be found that suggest the presence of an abdominal tumor, that suggest moreover that this tumor is to be sought in, or near the kidney, and perhaps that it is a definite kind of kidney tumor. The following remarks apply particularly to tumors of adrenal origin or so-called hypernephroma or mesothelioma of the kidney.

1. Pigmentation has been noted in a number of these tumors; it was general and very marked in two of my cases. It may of course occur with many abdominal tumors or with abdominal tuberculosis. Braasch has called attention to a "flushed, congested appearance which is almost pathognomonic." He regards a peculiar congestion of the bladder mucosa as quite characteristic.

2. Giantism, precocious sexual development, hypertrichosis in children should suggest adrenal tumor as well as tumors of the pineal gland or gonads. I have seen hypertrichosis in two women with hypernephroma of the kidney.

3. Arteriosclerosis, general and most marked, helped to determine the diagnosis in a boy of 14 seen years ago in the San Francisco Hospital. At autopsy no other cause was found for the vascular changes except a hypernephroma of the left kidney with metastases in lungs, glands and bones. Hypertension has been described in connection with hypernephromata. I have seen pressures of 160, 175, 180. Oschner has noted the tendency to brain hemorrhage in hypernephromata. Sippy observed hypertension in four cases, one man suffered from persistent headache until the tumor was removed. Israel, Albrecht and more recently Braasch have emphasized unusual hyperemia and enlargement of the heart and suggest these phenomena may be due to toxins entering the vena cava from the tumor.

4. Metastases are frequent and often unusual. There may be great numbers in glands, bones, liver and lungs or a single metastasia may long precede recognition of the primary tumor and lead to grave mistakes in diagnosis. Albrecht has recorded several instances of operation for supposed sarcoma or tuberculosis of bone in which examination of the specimen showed it to be a metastasis from a hypernephroma. Kolisko has called attention to the relation frequency of brain metastases and Albrecht cites a case in which an attempt was made to remove a brain tumor regarded as primary, the autopsy showing a metastasis from hypernephroma. Spontaneous fractures or tumors of bone should always suggest a kidney tumor. Pulsating tumors either of bone or soft parts should also lead to examination of the kidney regions. Orbital or skull tumors in childhood are most commonly of adrenal origin and palpable tumors of the abdomen have been found in several cases reported by Hutchinson and Tileston. The peculiar massive enlargements of the liver in infancy associated with adrenal growths may be mentioned in this connection. It can readily be understood how the clinical picture may be obscured by the symptoms from these metastases. I have seen sudden death from hemorrhage into a large brain metastasis, girdle chest pain and compression symptoms like Pott's disease from vertebral metastases, severe pain from multiple rib fractures, persistent cough and hemoptysis from lung tumors, uremia from invasion of the vena cava and both renal veins, edema of the feet and legs from block of the cava, pulsating tumors in the mid and lower abdomen and in the right tibia, etc.

5. Varicocele, first described by Guyon, is an important symptom of renal growths. I have seen it in five cases of hypernephroma. In one case, operated upon by Dr. Terry, it was marked on the left side and disappeared after removal of the large left-sided tumor. The man did well for many months, when a varicocele developed upon the right side, marking the beginning of right-sided tumor growth. Varicocele may arise from kinking of the vein, or from pressure of the tumor, as well as from pressure by enlarged glands, or from extension of the tumor into the renal and spermatic veins. Hochenegg thinks that failure of the varicocele to empty in the knee-chest position or when the tumor is lifted up indicates permanent block of the spermatic veins by glands or tumor penetration and forbids operation.

6. *Herpes.* I have noted zoster in the distribution of the 3rd and 4th lumbar nerve roots in the thigh twice in pyonephrosis and once in hypernephroma.

We shall hear fully to-day from others of the accuracy that attends diagnosis of kidney tumors by the newer methods of examination. Clinical diagnosis as I have tried to emphasize, here as elsewhere, must be based upon a good history, careful observation and proper correlation of facts. In his book on "The Diagnosis of Abdominal Tumors" a book which can always be reread with advantage, Osler closes with a citation from Traube, which puts well the reason we fail most often, in diagnosis of abdominal conditions. "Have we carefully observed all the facts of the case? Yes. Did the art permit of a judgment on the facts under consideration? Yes. Did we reason correctly upon the data before us? No. Wir haben nicht richtig gedacht."

MODERN DIAGNOSIS AND TREATMENT OF NEPHROLITHIASIS.*

By WM. E. STEVENS, M. D., San Francisco.

The advance in urology during the past decade, due principally to an enlarged and improved diagnostic armamentarium, has so increased our facilities for examination that the detection of urinary calculi is comparatively simple in the majority of cases. In a not inconsiderable number, however, the characteristic objective and subjective symptoms are absent or confusing, and the findings negative or misleading. It is these cases that sometimes tax to the utmost our diagnostic resources. Notwithstanding these difficulties the number of patients operated upon following the erroneous diagnosis of nephrolithiasis, is still too large to be of credit to modern genito-urinary surgeons. The principal reason for these mistakes may be expressed in three words—insufficient preliminary investigation. While the diagnostic error in the following case was excusable, it will serve to illustrate this point.

Mrs. B., a woman 33 years of age, with a history of having passed stones, two of which were in her possession, complained of severe pain in the right lumbar region. The urine contained a moderate number of pus and blood cells. Radiographic examination disclosed two faint shadows apparently in the pelvis of the kidney adjacent to a bismuth catheter, which had previously been inserted. The kidney was exposed, but a thorough search failed to reveal stones. The cause of the shadows was not ascertained.

RENAL LITHIASIS.

Symptoms: Pain. Usually located in the kidney region, is most commonly the presenting subjective symptom, being present in ninety per cent. of all patients. In 50% it is intermittent and colicky in character, and in 40% constant. It is limited to the region of the involved kidney, or referred along the course of the ureter to the bladder and genital organs, to the labium or ovary, and occasionally to the thigh, shoulder or opposite kidney. Rarely it is confined to the latter.

Urinary disturbances and findings. So-called silent stones may exist without pain or disturbance of micturition and with negative urinary findings; this condition is, however, uncommon. In over 80% of cases, blood, pus and bacteria are found. Pronounced frequency of urination or anuria may be present. Instances of the latter condition, verified by autopsy, have been reported in which the opposite kidney was normal in every respect; this, however, is quite unusual. Disease of the supposedly healthy kidney or the presence of calculi, here, or in the corresponding ureter, are generally found.

In view of the fact that recurrences take place in at least 50% of cases, this factor is of diagnostic importance in patients giving a history of having passed gravel or stones or of having undergone treatment for the same. It should also be remembered that recurrence is more frequent in those past middle age and in those who have been subjected to nephrotomy rather than to pyelotomy.

Diagnosis. Radiography. The Roentgen ray is our most valuable aid in the diagnosis of nephrolithiasis; it is negative, however, according to Cabot's experience, in about 15% of kidney and ureteral stones. These figures vary widely according to the preparation of the patient, the skill of the radiographer, and the composition of the stone. Satisfactory plates are obtained after the administration of castor oil in one ounce doses, twenty-four and twelve hours before radiography, together with a high enema the night before and a low enema on the following morning. A liquid diet should be given on the previous day and no breakfast on the morning of the exposure. A bismuth catheter should be inserted, as it assists materially in determining the location, as well as in the diagnosis, of both kidney and ureteral stones. Radiographs should always be taken of both kidneys and ureters. Neglect of this precaution will frequently cause us to overlook calculi in the supposedly healthy organ in the presence of referred pain. Fenwick divides the lower space into an inner and an outer portion by running a line vertically upward from the center of the iliac crest. Shadows inside this line are usually intrarenal, on, or near this line in the cortex and, outside this line, extrarenal. The density of a shadow depends upon the amount of calcium salts present; calcium oxalate, calcium phosphate and the rare cystin stones are detected most readily. Regardless of their composition, stones are not well seen if surrounded by a large quantity of pus as in perinephritic abscess and some cases of pyonephrosis. Pure uric acid calculi do not cast a shadow upon the plate, but by means of pyelography their detection will at times be feasible on account of the opaque coating resulting from this procedure. Moreover, with a persistently alkaline urine, the presence of uric acid calculi is extremely unlikely, phosphates soon being deposited upon them.

Pyelography. In addition to aiding in the detection of stone shadows, because of the dissimilarity in density, pyelography assists in the determination of their relation to the kidney pelvis. This is of cardinal importance in deciding upon the proper operative procedure. Pyelography outlines the pelvis and individual calices, disclosing in the presence of stones, inflammatory dilatations and irregularities according to their location. These changes in outline are manifested, even if the stone be entirely cortical, especially if infection is present or has at any time existed. Brasch has called attention to the fact that a shadow overlapping the outline of the calyx is probably extrarenal, as is one lying to the side, rather than at, or near the end of a calyx, which is the usual position of a stone.

Although of decided value in the diagnosis of nephrolithiasis, pyelography is not devoid of danger.

* Read before the annual meeting of the Medical Society, State of California, Fresno, April, 1916.

Many disagreeable and several fatal results have been reported following this procedure. I have seen one death following the use of a 25% collargol solution. Whatever the preparation used, it should be introduced by gravity through a catheter not large enough to entirely occlude the ureter, and in quantity seldom exceeding 6 cc. The capacity of the pelvis should be previously estimated with some bland liquid. I have obtained better results with a 15% collargol solution introduced in the above manner, than with the more recently advocated thorium nitrate of the same strength.

A stereoscopic examination in connection with pyelography will determine still more definitely the relation of the shadow to the kidney.

Wax-tipped catheter. Next in value to radiography and its adjuncts pyelography and stereoscopy, is the wax-tipped catheter. This valuable procedure has been used by Howard Kelly in women since 1895, long before the advent of the Roentgen ray. The most important improvement in the technic of its application has been advanced by Hinman, who uses an F. 10 rubber catheter as a protector to the wax-tipped catheter in its passage through the channel of the operating cystoscope. This method seldom fails to detect pelvic stones unless inaccessibly located in a dilated calyx.

Cystoscopy affords us a means of detecting a condition of the ureteral mouth suggestive of renal calculi. During an acute attack the orifice of the ureter is seen contracted; after the attack has terminated, it appears dilated and swollen.

Functional kidney tests are of confirmatory value; a deterioration of function is usually noticed in nephrolithiasis.

Palpation. Isreal and others have reported cases in which they have palpated renal calculi. This is seldom feasible, unless the stone is very large or the kidney displaced.

DIFFERENTIAL DIAGNOSIS.

The conditions most likely to mislead us in the diagnosis of nephrolithiasis are, in order of their frequency, tuberculosis of the kidney, gall stones and calcified glands. Illustrations:

A well-nourished middle-aged woman complained of pain in the right kidney region radiating toward the bladder; also frequent and painful urination. The urine from the right ureter contained pus and blood, but repeated examination failed to disclose tubercle bacilli. Two small, well-defined shadows were found on radiographic examination. Exposure of the kidney showed two areas of caseation in the lower pole.

Another patient complained of attacks of pain resembling typical stone colic. Radiography disclosed a well-defined shadow located in the region of the right kidney pelvis. Operation proved this to be a tuberculous lymph gland.

Tuberculosis. While the tubercular putty kidney may be frequently diagnosed radiographically by the density, irregularity and size of the shadow, scattered tubercular foci located in the renal parenchyma producing shadows of more or less density, according to the amount of calcium salts present, are usually impossible of differentiation. A careful study of the radiogram will, however, often show an irregular washed-out appearance, suggestive of tuberculosis.

Pyelography frequently reveals in these cases an irregular dilatation of the calices most noticeable at the apices, and, in advanced cases, an irregular, moth-eaten appearance of the entire pelvis. Dilatation of the ureter due to inflammation or stricture is frequent and is followed by dilatation of the pelvis. Cystoscopy will often reveal an abnormal ureteral orifice or ulcers of the bladder wall adjacent to the ureter, either of the corresponding, or of the opposite side. Tuberculin tests are of value in the presence of a combined focal and general reaction. Finally, it must be remembered that both conditions may co-exist.

Repeated microscopic examinations of the urine and inoculation of guinea pigs will usually result in the detection of tuberculosis, if present. A thorough physical examination together with the consideration of the general condition and symptoms of the patient are of utmost importance.

Gall stone shadows are usually dense at the periphery which is composed of lime salts, and indistinct in the center which consists of cholesterine. They are usually multiple, lie close together and nearer the median line. Pyelography will demonstrate the distance from the pelvis laterally and will also show the outline of the pelvis and calices, which are normal in cases of gall stone or other extrarenal shadows. Stereoscopy will determine the distance from the pelvis anteriorly or posteriorly.

TREATMENT.

In considering the treatment of nephrolithiasis there are three factors that should constantly be borne in mind. First, that calculi gradually increase in size, pressure atrophy of the renal parenchyma resulting if the stones are large. Secondly, infection will eventually occur, and possible hemorrhage must also be considered. Hydronephrosis due to occlusion of the ureter is not uncommon. Lastly recurrence takes place in 50% of all cases, this figure being slightly increased following nephrotomy. Prior to middle age the percentage is greater than after this period.

Functional kidney tests are of importance in determining the indications for treatment by disclosing a deterioration of function on the affected side. It has been my practice following catheterization of the ureter to use the urea, phenolsulphonephthalein and phloridzin tests simultaneously, thereby lessening the necessity for more than one cystoscopic examination, that is, when the results correspond, as they usually do. The quantitative sugar estimation following the intravenous administration of phloridzin, a procedure which I have followed during the last few months, impresses me as the most valuable of these tests. When catheterization of the ureters is impossible or undesirable, the indigocarmin test is of great value. Total function is satisfactorily ascertained from urine collected for two hours after the intravenous injection of phthalein of phloridzin.

Medical treatment occupies a position of minor importance in the therapy of nephrolithiasis. Pro-

fuse diuresis may have a tendency to flush out small stones, and drugs rendering the urine alkaline or acid over a considerable period of time might have a tendency to disintegrate the calculi, depending upon their composition.

Surgical Treatment. In aseptic cases where symptoms are absent or of minor importance the decision for or against operative procedure will depend upon the age and general condition of the patient and the position of the stone in relation to the kidney pelvis and consequently the possibility of its removal by pyelotomy.

The presence of anuria should serve as an indication for immediate operation. If no obstruction is found in the suspected kidney or ureter or if the kidney appears unable to fulfil its function satisfactorily, the other kidney should also be exposed. Decapsulation will often suffice in a kidney reflexly inactive. This fact, however, does not preclude the necessity for exploration of the kidney and the corresponding ureter.

Since its introduction by Henry Morris, in 1880, until quite recently, nephrotomy has been the operation of choice with urologists for the removal of kidney stones. Objections to this method are: (1) The frequency of severe primary and secondary hemorrhages. (2) The destruction of the vascular supply and the renal parenchyma. (3) The danger of overlooking calculi. (4) Septic nephritis and perirenal infection extending in some cases to the peritoneum. (5) The liability to fistula of long duration. The advantages of nephrotomy are: (1) Better drainage in the presence of infection. (2) The possibility of its performance without delivery of the kidney in the presence of a short pedicle or extensive adhesions. (3) The comparative case of extraction in the presence of large or branched stones and in calculi scattered through the parenchyma.

A longitudinal incision beginning 1 cm. posterior to the convex border, causes the least destruction of blood vessels and renal tissue. With the knowledge obtained from improved radiographic technic and functional kidney tests, complete bisection of the kidney is rarely necessary, a small incision usually sufficing. The patency of the ureter having been determined, the cut surfaces should be carefully approximated by through and through sutures, a drainage tube being inserted if infection is present.

The advantages of pyelotomy are: (1) Infrequency of primary or secondary hemorrhage. (2) The possibility of a thorough bimanual exploration of the kidney, and (3) A shorter convalescence. The disadvantages are obvious in the presence of a short pedicle, pronounced infection, numerous adhesions and in stones distant from the pelvis.

Pyelotomy, although advocated by Czerny in the same year that nephrotomy was introduced by Henry Morris, has only recently become popular. It is seldom productive of serious results when performed in the proper manner. The kidney having been delivered into the wound, an incision is made into the posterior wall of the pelvis between two traction sutures. With a finger in this incision, and the other hand externally, a very satisfactory exploration is feasible. This incision should not approach too near the uretero-pelvic junction, on account of the danger of stricture. It is likewise inadvisable to extend it into the renal parenchyma on account of the large size of the peripelvic branches of the renal arteries and veins and the liability of serious hemorrhages resulting therefrom. Nephrotomy would be preferable, in addition to pyelotomy.

Nephrectomy. Primary nephrectomy is without doubt the operation of choice in cases of advanced calculous pyonephrosis with little functionating tissue in the presence of a healthy kidney on the opposite side. In cases of lesser severity, however, the operation of partial nephrectomy is to be considered. If involvement of the opposite kidney coexists it is, in my opinion, imperative. The danger from a focus of infection which it is usually impossible to completely remove, is less than that from renal insufficiency. The following case will serve as an illustration of the advantages of this type of operation. I have not been able to find another case in the literature where a partial bilateral nephrectomy has been performed in the presence of an advanced bilateral calculous pyonephrosis.

J. J., an Italian boy, 19 years of age, barber by occupation, came to me in July 1912 complaining of pain, usually dull, but at times quite sharp, in the thigh and left hypochondriac region. He also suffered from intestinal flatulency, occasional pain in the epigastrium, sour stomach and dryness of the mouth. He had been treated for gastritis, malaria, rheumatism, etc. No subjective urinary symptoms were present. The urine contained a large number of pus and a few blood cells. Cystoscopy showed patulous ureters, injected trigone, and prominent intraureteral ligament. The ureters were catheterized and cloudy urine containing a large amount of pus and a few blood cells obtained from both kidneys. Bacteriological examination showed the colon bacillus. Functional tests showed somewhat low values on both sides, particularly on the right. Blood cryoscopy showed satisfactory absolute kidney function. Radiography showed eight typical stone shadows on the right, and six on the left side.

The right kidney, after being freed from extensive adhesions, was found to consist principally of a large pus sac, from which, on incision, serous fluid and calculi escaped. The center of the sac contained tissue apparently healthy which it was decided to preserve on account of the known pathological condition of the opposite kidney. Accordingly as much of the diseased portion as possible was removed together with a large part of the greatly dilated pelvis. The patient rallied well and left the hospital five and a half weeks later in fairly good condition. Three weeks later he again entered the hospital for operation on the other kidney. The urine from the right side now showed much less pus than that from the left. Two days later, two months after the first operation, the left kidney was exposed. It also represented a large sac, from which a large amount of muco-purulent fluid escaped and six calculi were removed. The walls were resected in the same manner as the opposite kidney. The patient did not rally as well as from the previous operation, but in eight weeks the fistula had closed and he returned to his work at which he has continued uninterruptedly up to the present time. The urine still contains pus. Radiographs taken a few days

ago show a small shadow suggestive of a calculus in the lower pole of the right kidney.

After-treatment. The after-treatment of urinary calculi is of extreme importance in preventing the formation of new stones, or an increase in size of existing ones, the removal of which is contra-indicated.

In calcium phosphate stones, milk, eggs, fish, beer, wine and fruits are to be avoided on account of their calcium content. Drugs rendering the urine acid, as sod. benzoate, or acid sodium phosphate should be given, and large quantities of water taken. In uric acid stones, the diet should consist principally of carbohydrates, vegetables and fat. Alkalis are indicated internally, also plenty of water. In oxalic acid stones, increase the calcium and decrease the acidity. Very few carbohydrates should be given, on account of their tendency to fermentation which increases the formation of oxalic acid.

The rare cystin stones are present in those individuals who have lost the power of oxydizing the sulphur containing constituent of their protein, consequently intake of the latter should be greatly restricted.

ACUTE DILATATION OF THE STOMACH. A REPORT OF SIX CASES, THREE OCCURRING DURING ANESTHESIA.

By FRANK B. REARDAN, M. D., Turlock.

In 300 anesthetics, covering a period of four years, I have encountered four cases of acute gastrectasis, two occurring during anesthesia. To these, two more cases observed, may be added, one of which occurred during anesthesia.

The most important symptoms are vomiting, abdominal distension and collapse. Thirst is also an important symptom. Pain is variable. Hiccough, cyanosis, giddiness, and syncope are rarer symptoms. The stomach contents are usually watery, at first yellowish or greenish, later on becoming brownish, or black, from admixture with blood. In five of the cases reported here, the contents have been black or brownish from the first, being typically coffee-ground in character. As a rule bile is present, and a varying amount of hydrochloric acid.

Borchgrevink mentions the cases as falling into one of eight groups. His paper is the most recent and thorough covering of the literature, that I can find. It seems strange, however, in his review of 144 cases of acute dilatation, no mention is made of the condition occurring during anesthesia. His groups are: Post-operative; During acute illness or convalescence; During chronic illness; Disorders or deformities of the spine; Overloading of the stomach; Blow on abdomen; Confinements; Without apparent cause. To these groups I would add: During anesthesia; to cover some of the reported cases, as well as the three herein reported.

Paralysis of the stomach is the oldest and most generally accepted explanation for the condition. Primary mechanical occlusion of the duodenum with secondary dilatation of the stomach, and primary gastric dilatation, whether neuro- or musculo-paresis, and secondary mechanical occlusion of the duodenum, either by direct pressure of the stomach on the duodenum in its passage in front of the spine, or by secondary arterio-mesenteric compression brought about by the distended stomach's pressure on the small intestines, are two other important hypotheses. Albrecht held that the dilatation was due to a primary constriction of the duodenum by the superior mesenteric artery, through dragging on the root of the mesentery. Other factors, such as a pre-existing chronic dilatation of the stomach, gastric hyper-secretion, spastic occlusion, and a simultaneous vulvular kinking of the pylorus and cardia have been urged as the primary cause.

Most of the causes given are easily disproven by a clinical consideration of the cases studied, and the etiological question is to be decided between a paralysis of the stomach, and arterio-mesenteric compression. Von Haberer differentiates between acute dilatation of the stomach, and what he terms acute arterio-mesenteric ileus. The latter gives practically the clinical picture of a high intestinal obstruction. The mechanics of this condition are as follows: The band formed by the superior mesenteric artery lying across the transverse portion of the duodenum, is pulled upon by that portion of the small intestines lying in the pelvis. The duodenum is now compressed between the artery and the spine, the pull upon the mesentery having obliterated the angle between these two structures. Now, either the stomach empties itself by repeated vomitings, or the angle of the esophagus with the cardia may form a valve, preventing the stomach from emptying, and leading to dilatation.

For this condition to occur, the bowel must be empty, and have a fairly long mesentery, long enough to reach into the pelvis, so that by its weight, traction would be exerted upon the superior mesenteric artery.

In favor of the paralysis theory is the clinical evidence of the appearance of acute dilatation in disorders of the spine, illnesses of the nervous system, severe injuries, and the influence of anesthesia in causing paralysis. A short review of the few cases in this series will show, at least the clinical evidence, of a predisposing cause in anesthesia.

Case 1. Male, age about 50. Acute dilatation of the stomach about 14 hours after laparotomy. Ether anesthesia. Patient in extreme collapse when first seen. Died.

Case 2. Female, age 46. Acute dilatation during abdominal Caesarian section by Dr. E. A. Julien of Turlock. Very little collapse, violent retching but no vomiting on the table. Stomach washed out immediately, large quantity of coffee-ground material in washings. The patient did not have any after effects, not even vomiting after operation, and had a normal convalescence, although at

the time the dilated stomach filled the entire abdominal cavity.

Case 3. Female, age 60. Acute dilatation during operation for varicose veins of leg by Dr. P. N. Jacobson of Turlock. Ether anesthesia. Extreme distention of the abdomen, violent retching, with but slight vomiting, and extreme collapse occurred on the table. The stomach was washed out immediately, and the typical coffee-ground material noted again. The anesthetic was then continued until the completion of the operation. Convalescence was delayed, the patient being very sick for a week following operation.

Case 4. Female, age 58. Acute dilatation occurring six hours after appendectomy by Dr. Jacobson. Ether anesthesia. This case before going to the hospital had drunk very heartily of fresh milk. This was noticed at the completion of the operation, during gastric lavage, which is practised as a routine. Great chunks of curdled milk were noted, but the washing was, unfortunately, not thorough enough, due to the patient awakening too soon. When first seen by me after operation, she was in extreme collapse. She was treated by saline hypodermoclysis, gastric lavage, and the prone position. Recovery took place in three days.

Case 5. Female, age 59. Ether anesthesia. Acute dilatation four days following abdominal section for inoperable carcinoma of pancreas. Patient's abdomen before operation greatly distended by ascites, which was relieved by operation. Patient in bad shape for over a week, although repeated stomach washings and prone positions brought relief. Typical coffee-ground material noted in this case.

Case 6. Male, age 22. Ether anesthesia, by Dr. Wilson. Operation for wiring tibia for non-union, by Dr. Jacobson. Acute dilatation about the end of anesthesia. Extreme collapse for the time being. Thorough stomach washing brought immediate relief. Coffee-ground material noted in this case.

From a personal communication with Dr. E. A. Julien I have knowledge of another case of acute dilatation which occurred during anesthesia, while the abdomen was opened.

The treatment of this condition is repeated stomach washings, and placing the patient in the prone position, with a pillow under the pelvis. The results with the latter method are often miraculous, the patient noticing relief immediately. In cases 4 and 5, I noticed this effect, especially in the latter case, where the patient would ask to be turned back, after trying some other position for a short while.

Hypodermoclysis has been useful in supplying the body with fluid to make up that lost by secretion into the stomach. In case 4 it was used, along with the washings and posture, with decided benefit.

The striking benefit obtained from posture, is decided evidence in favor of arterio-mesenteric compression, as a cause of, or a factor in, acute dilatation. On the other hand, the paralyzing influence of the anesthetic can not be dispensed with, in this series, at any rate.

Caution against too thorough emptying of the bowels before operation, so that the bowels would be completely empty, and against filling the stomach, either with fluid or food in too great a quantity after operation, has been urged as a prophylactic measure. I would urge gastric lavage at the end of every anesthesia, as a prophylactic measure of great value. Had case 4 been properly washed out, so that the stomach would have been empty, instead of being filled with curdled milk, the condition, it is reasonable to suppose, would have been prevented.

Women are more prone to acute dilatation than men, in the proportion of 60 to 40. In regards to age, 75% of all patients reported are between 10 and 40 years of age. The last five cases reported gave me the chance for close observation, either as anesthetist, consultant, or surgeon. Of those, four are women, averaging, however, well over 50 years of age.

The mortality in Borchgrevink's series of 144 cases is 54.1%. He reports Conner giving a mortality in 1907 of 72.5%, and Laffer in 1908, giving 63.5%.

These records include both medical and surgical treatment. Surgery has proven a failure, with a very bad prognosis. In untreated cases the prognosis is also extremely bad. In 23 cases reported by Borchgrevink, treated surgically, 18 died. In 31 cases treated medically, he reports 29 deaths, with one case cured by apomorphine, and one by hypodermoclysis. In 48 cases treated by the stomach tube, 24, or 50%, died, while in 26 cases treated by posture, only 3 died, or about 12%. The striking benefits of postural treatment, in this dangerous condition, is evident, by a comparison of his tables.

In case 1, which died, postural treatment was not attempted. This case happened while in my interne year, and helped me to realize the severity of this condition. In case 2, stomach washing at the time of operation was sufficient. In the remaining 4 cases, treatment consisted of stomach washings plus the prone position, and recovery took place in all four cases.

Three interesting cases are reported last year, two by Luckett, and one by Mayoral, in which acute dilatation occurred during laparotomy, and in all the cases the major feature was the expulsion of enormous quantities of gas, without any fluid being obtained, when the stomach tube was passed. Luckett attributes the acute dilatation in his two cases, to the gulping of air into the stomach, with the resultant distention. All three cases made an uneventful recovery after stomach washing. Crandon and Ehrenfried give an account of two cases, one in their surgical practice, and one reported by Torbet, of acute dilatation during operation for abdominal Caesarean section. No details are reported, however.

In my three cases noticed during anesthesia, coffee-ground material was noticed, in the last case giving the clue to the condition before any other symptom. Gas, while present in all cases, was hardly a leading symptom. In case 4, overloading of the stomach before operation, was undoubtedly a strong factor, together with the anesthetic, in bringing about the dilatation.

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MERCURIALIZED SERUM INJECTIONS IN SYPHILITIC NERVOUS DISEASES.*

By H. G. MEHRTENS, M. D., San Francisco.

The intradural treatment of syphilis of the nervous system has received a constantly increasing amount of attention since the publication of the results of Swift and Ellis. Even before the efficacy of that method could be finally settled, the scarcity of salvarsan made its use almost prohibitive. Therefore, in July, 1915, in the Neurological Clinic of the Stanford Medical School, we began to treat a series of cases using the Byrnes method of mercurialized serum injections. The following is a preliminary report of that work (thirty cases—190 injections), to be followed by later observations of these cases and a comparison of the results of the Byrnes method with the Swift-Ellis technic and the combined method.

The material used was particularly fortunate in that most were old clinic cases that previously had been given very thorough treatment with salvarsan and mercury, with little result. The fact that these cases had treatment by other anti-leutic methods eliminates one of the factors of uncertainty from our results. The fact that our series includes paresis (7 cases), tabes (18 cases), cerebro-spinal lues (5 cases) shows the value of this treatment in a wide range of conditions.

We made no effort to select favorable cases for treatment—first because we were anxious to note its effect upon all types; secondly because, while early cases always responded more favorably to treatment, an occasional good result would occur even in apparently hopeless cases.

In the technic of the treatment we followed the original Byrnes description.

As far as the inconveniences, complications and dangers of the method are concerned, we had no fatalities, indeed no alarming symptoms. Most of the reactions have been quite severe, especially when compared with the Swift-Ellis injections. The temperature ranges from 99 to 103 F. depending partially upon the amount of Hg injected. Pains in the back and legs were almost invariable, often being severe enough to require morphine for their control. Headache, nausea and vomiting were not unusual. Two of our cases exhibited clonic contractions of the muscles of the back and legs. We had no incontinence of the sphincters develop, nor motor paralysis—although a paretic developed a temporary hemiplegia about ten days following his dismissal from the hospital. In about 40% of the cases albumen and casts developed in the urine, especially when the mercury was pushed to the point of toleration. In fact, we felt convinced that some of the nausea, headache and malaise that developed when the treatment was pushed too rapidly might well be due to the toxic effect of the mercury upon the kidneys. Clear serum seemed to cause less of a reaction than sera in which there still remained some hæmoglobin. Heating the serum at 56 degrees C. for one hour instead of thirty minutes seemed to reduce the severity of the reaction somewhat. Gradually increasing the bichloride of mercury from 1/100 gr. at the first injection to 1/25 in the later injections and increasing the dosage only as the reaction warranted it, is probably responsible for the lack of some of the unfavorable complications in this series. In ten cases we were unable to find a trace of mercury in the spinal fluid two days following an injection. So we feel that in cases that stand injection well, the treatments may follow closely upon the subsidence of the previous reaction. In cases in which the injection is followed by loss of weight and appetite with great weakness, especially in elderly people, a ten-day or even longer interval may be desirable—the urine being watched closely.

In order to estimate the results of this treatment we tried to find out: First, the subjective feelings of the patient. This we did by asking them to answer a printed set of questions. Seventy-five per cent. of the patients claimed to be improved, in one way or another, following the treatments. Allowing for the hope that a new remedy is bound to inspire, these patients showed more than their share of cheerfulness. This was frequently commented upon by the nurses who took care of them. In 20% of the cases this improvement was remarkable. Moreover, a large proportion of the patients paid something for their treatments, making every effort to have them continued.

The symptom of pain was especially ameliorated by the treatment. Lightning pains frequently subsided entirely. Headaches, especially in cerebro-spinal lues, were influenced very early. Girdle pains were much more resistant, persisting long after the pains in the legs had disappeared.. Gastric crises were unfavorably influenced in many cases. Each treatment seemed to stir up another attack—although, it must be admitted that the crises were much less frequent following the treatment.

The ability of the patient to go back to a self-supporting existence seems a fair gauge of improvement. So far, nearly 45% of the patients treated are working full time.

Among the objective findings we considered:

Weight: nearly every patient lost weight following an injection. The average loss was three pounds, although some of the cases with gastric crises lost as high as ten pounds. Most of the patients would regain their weight in about ten days. About 35% of the patients showed a gain in weight following a series of six injections, after an interval of fifteen days with no medication. Three patients registered a large gain in weight up to twenty-two pounds in five injections. However, this was just as unusual as the rapid loss of weight.

In the physical examination, the reflexes that were found absent upon the first examination remained absent upon subsequent examinations following treatment. Areas of anaesthesia cleared up in about twenty per cent. of the cases exhibiting it. However, shifting of the areas of anæsthesia was not unusual, even without treatment. The Romberg sign and ataxia were definitely improved in about the same per cent. of cases. In the five

* Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 20th, 1916.

cases showing retinal changes, two were entirely uninfluenced by treatment, two were sufficiently improved to go back to rough work, one case made a brilliant recovery to normal vision.

The spinal fluids, in general, showed the pleocytosis to be diminished progressively, not uncommonly reaching normal in five to eight treatments. The Nonne and Noguchi tests steadily diminished in intensity. The Wassermann test seemed to be influenced more slowly, at times lagging far behind the clinical improvement. In fact, in only five cases were we able to change a positive to a negative reaction. However, in 90% of the cases there was some reduction in the strength of the reaction. The Lange test was even more difficult to change to a negative reaction.

As to the relative efficacy of the treatment in the different forms of syphilis of the central nervous system: the results in paresis were poor. Four cases grew steadily worse, two remained stationary, one only appears to be arrested. In tabes the results were much more satisfactory. Symptomatic improvement was the rule. The majority returned to work with lessened pain and ataxia. Cerebro-spinal lues gave the best results. Of the five cases every one returned to work. Headache and cranial nerve involvement were improved early in the treatment.

Space allows only a summary of a typical case of each group.

Paresis (treated with a poor result).

A. H., 36,605, an American molder, age 46, giving a history of chancre 23 years ago and a "nervous breakdown" about eighteen months ago, treated by salvarsan and mercury. His pupils were quite sluggish, reflexes exaggerated, speech blurred, tremor of the tongue and hands. The Wassermann in the blood, spinal fluid, Nonne and Noguchi tests were positive. Cell count fifty lymphocytes. Lange positive. After treatment with five injections, extending over three months, the physical examination remained the same. The Wassermann in the spinal fluid was still positive, cells were reduced to seventeen, the Nonne and Noguchi still positive. Mentally the patient was much worse, now had delusions of grandeur and at times of persecution. Had to be committed to a state hospital.

Paresis (treated with a fair result).

J. H., 34,457, German bookkeeper, age 34, giving a history of chancre twelve years ago and a "nervous breakdown" about two years ago, treated with salvarsan and mercury. His pupils were quite sluggish, reflexes exaggerated, speech blurred, tremor of the tongue and hands. The Wassermann in the blood and spinal fluid, Nonne and Noguchi were positive. Cell count is fifty-five lymphocytes. After nine injections, extending over an interval of five months, the physical findings remained the same, except for a marked loss of tremor. Patient returned to work—the speech is not quite normal, is calm and cheerful. The Wassermann in the fluid is reduced in intensity, cells only three per cu. mm. The Nonne and Noguchi barely positive.

Tabes (treated with a good result).

J. F., an Armenian tailor, age 40, giving a history of a chancre eight years ago, well treated with mercury and salvarsan, complained of numbness and cold in the legs and some dizziness. He showed sluggish pupils, absent patellar and achilles reflexes, hyperaesthesia to cold. The Romberg was positive, with marked ataxia. The Wassermann in the blood, and spinal fluid was positive, as were the Nonne and Noguchi tests. There were six lymphocytes per cu. mm. Seven injections, over a five-months interval, saw him back to work, quite cheerful, with no pains in the legs and much less ataxia. The Wassermann in the fluid was now negative, the cell count was now six cells per cu. mm. The Nonne and Noguchi were questionable.

Cerobro-spinal lues (treated with a good result).

F. I., German baker, age 35, had a history of failing vision, headache, and malaise treated with five injections of salvarsan plus mercury. His pupils reacted very slowly to light—there was a marked optic neuritis and choreoditis. The Wassermann was negative in the blood but quite positive in the spinal fluid. The cell count was 175 cells per cu. mm. Four injections entirely cleared up his headache and sent him back to work. The fundi were reported normal. The Wassermann in the spinal fluid became normal, the cell count was reduced to six cells, the Nonne and Noguchi were negative.

In conclusion it can be said that the reactions following the injections have been severe in some cases but no alarming symptoms have developed. The majority of the patients have been subjectively improved, with increased ability to work. Ataxia was lessened but the reflexes were not regained. The spinal fluid showed lessened pressure, decreased cell count, reduction in the intensity of the globulin tests, with a tardy reduction of the Wassermann reaction. Paresis, with the possible exception of very early cases, responds poorly to this treatment. Tabes is frequently symptomatically benefited. Cerebro-spinal lues responds excellently to treatment.

THE ECONOMIC IMPORTANCE OF THE WELL POISED PERSON.*

By HARRY LESLIE LANGNECKER M. D., San Francisco.

The purpose of this paper is to emphasize the importance of the correction of the mechanics of the human body in the treatment of disease. In most of the cases, especially those of a chronic nature, which come to the general practitioner, and more often to the orthopedic surgeon, either directly or indirectly, the anatomy or physiology is faulty.

It has been within a very recent period that definite regional anatomical knowledge of the human body has been acquired. The regional anatomy and the relation of posture to the proper functioning of the various organs, have been most thoroughly investigated. The facts set forth by Goldthwait [6] and others concerning the influence of posture on the efficiency of the human body, can readily and satisfactorily, be demonstrated, by any physician.

The normal individual is one whose anatomical structure is correct. There exists no defect in the bony or muscular structures, for the work of weight bearing. There is no body strain. The various organs perform their functions most efficiently. Such individuals, who are leading a perfectly hygienic life, are few in any community. The vast number of persons, those who we are constantly called upon to treat, make up to a large extent the field of chronic medicine. From an anatomic standpoint, these last mentioned humans may be placed in definite groups. These groups or types represent deviations from the nor-

* Read at the State Medical meeting at Fresno, Cal., April, 19, 1916.

mal anatomical type. On the one side the lean, the long and slender, or the so-called carnivorous type. On the other side the fat, the short and heavy-set, or the so-called herbivorous type.

That food is an essential factor in the arrangement of the anatomy of the alimentary tract of these different types of humans must be recognized.[5] In a general way, it may be said that certain articles of food are necessary for the improvement of the various types. For instance, the carnivora develop better on a largely meat diet, the herbivora on a mostly vegetable diet.

In the type of human beings coming under the carnivorous division, there are many striking characteristics. The entire figure is lighter in every way, with slender skeleton and minimum amount of fat. The individual is either small and delicate in make-up or tall and lean. The head is proportionately large with narrow face and jaw. The hair is abundant and often grows on parts of the body where it is not usually found. The ears are large and prominent, palatal arch is high, adenoid and tonsillar tissue apt to be excessive. The trunk is longer and narrower than that which is considered normal; the increased length being chiefly in the lumbar region. The ribs are long, with marked downward inclination of the lower ones, the tenth rib is almost invariably free. At times, in a standing position, the lower ribs may touch the upper portion of the ilia. The spine is smaller in size than normal and very flexible, the lumbar vertebrae resembling the dorsal vertebrae in shape; the vertebral body being about the same width laterally as anterior-posteriorly. In the lumbar region is frequently found six vertebrae, with the full number in the sacral region, which probably accounts for the greater proportionate length of the body. The transverse processes are small and short, the articular processes usually flat. These formations tend to make a very flexible spine and it is from this type of individual that we get the acrobats and fancy dancers. The chest is of fair size, although its organs are smaller than so-called normal. The stomach instead of being pear-shaped, is long and tubular; its attachments are less firm, so that the possible downward displacement in standing is much greater than normal. Instead of the usual 20 feet of small intestine, we find only 10 or 15, with thinner walls and smaller lumen. In the standing position, the intestines are almost entirely in the upper pelvis or lower abdomen, due to the mesentery being longer than normal; in which case the entire colon lies below the crests of the ilia.

The transverse part of the colon is usually attached to the stomach, which means that it will be found below the position of the stomach even though the stomach may have its lower border in the pelvis. In this type, the appendix is usually well developed, which partly explains the very common occurrence of appendicitis in the slim thin individual. Retroperitoneal fat is scarce, hence palpation of the flanks is easy. The kidneys are naturally mobile; the liver, rather loosely attached and smaller than normal.

In this kind of anatomy, the scaphoid type of scapula is found. The muscle fibers are long and slender. The blood pressure is low. The extremities vary in length, always proportionately long. The arms, legs, hands and feet are slender and loose-jointed; characterized by tapering fingers and high arches. At times there is an accumulation of fat in various parts of the body. This is not common; as it usually develops rapidly and may disappear as quickly. Such fat is soft and generally suggests poor health.[6]

Figures I, II, III exhibits prominent peculiarities of the carnivorous type.

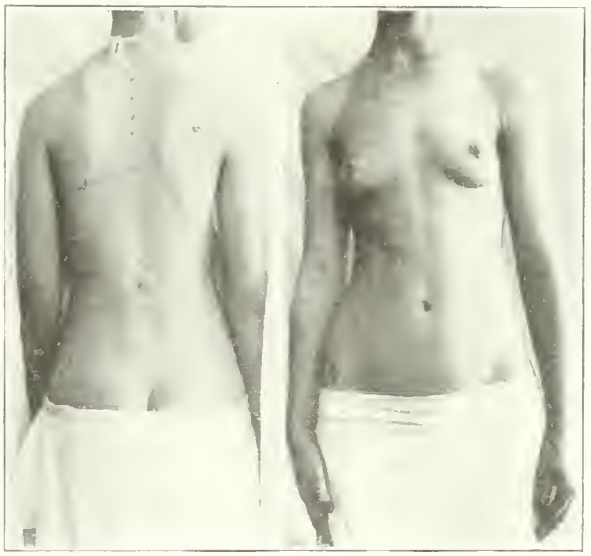

Fig. 1.

Carnivora group. Constant tendency to faulty postures owing to relaxed joints. Hypotonicity of muscles and ligaments. Poor chest development. Visceroptosis.

The herbivorous type is in marked contrast to the carnivorous type which I have just described. The body is built on much heavier lines throughout. The skeleton is large and heavy. The muscle fibers are coarse and oval. There is a superfluous amount of fat, containing much connective tissue; so that the flesh instead of being soft as in the carnivorous variety, is firm and hard.

The skin is certainly thicker and less delicate. The hair is less abundant and falls out earlier in life, which probably accounts for so many of the bald heads among fat people. The contour of the head is more rounded, with broad face and jaw. The ears are, proportionately small and would not be considered prominent. The short neck with the thick broad shoulders must be noted. The chest is larger both in the anterior-posterior and the lateral diameters than normal. The diaphragm is high, the costal border is formed in a broad angle, rarely less than 90 degrees and sometimes more. The 10th rib instead of being free as in the carnivorous type is, as a rule, attached to the conjoined cartilages in front. The last two ribs are relatively short Whereas in the carnivorous type the lumbar region is long, here it is short with frequently one less lumbar vertebrae.

Having only four lumbar vertebrae partly accounts for its shortness, and partly it is because the sacrum is set so well down between the wings of the ilia.

The abdominal cavity is correspondingly large, being both broad and deep. The stomach is large and of the usual pear-shaped kind. The intestines are thick-walled and bulky. The small intestines often measure as much as 25 to 38 feet, which is an excess of some 5 to 15 feet longer than normal. The large intestine is equally large and long, ranging from 5 to 8 feet in abnormal length. The added length is found in the longer transverse portion and in the sigmoid. The liver is large and placed well up under the diaphragm. There is plenty of abdominal and retroperitoneal fat, so that the kidneys are held well in place and the sympathetic ganglia are well protected.

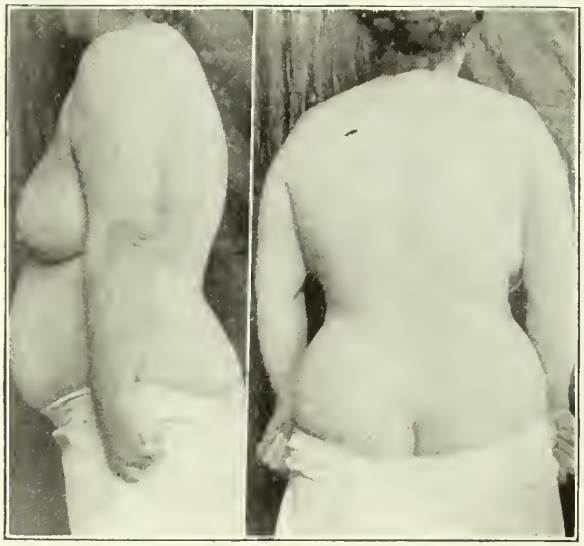

Fig. 2.
Herbivora type—exaggerated. Often perplexing problems to treat.

On account of this type of humans being so much more heavily and strongly built, the joints are noticeably less flexible. The spine is broader and the contour of the vertebrae are less smooth. The diviation from the normal is especially seen in the lumbar region. The lateral diameter of the vertebral bodies are considerably greater than the anterior-posterior. The articular processes are strong and large and invariably of the crescentic shape. The transverse processes are unusually long and broad, frequently impinge on the upper portions of the ilia or form an articulation, the lumbo-sacral transverse articulation, with the top of the sacrum. The long and broad transverse processes upon the lumbar spine produce the rounding of the lower back. Apparently this formation furnishes attachment for the many coils of intestines.

The blood pressure in this type is higher than normal. The extremities may vary in length but they are always heavy. Large legs with straight knees, feet thick and broad, low but strong arches, hands with short stubby fingers, these points are readily observed.[6]

Figure II presents characteristics of the herbivorous type.

In children, most frequently of the carnivorous or the subnormal grouping, postural disturbances show either some bony or some muscular defect, or some unequal weight distribution. It is not until the child begins to walk that such conditions are observed, and then very frequently, involvement of the bony or muscular structure of the back or lower extremities. Such defects may increase and become fixed; thus producing, in a short time, a cripple, or remaining insignificant, and often unobserved, gradually develop a number of secondary deformities, which eventually impair body efficiency.[12]

Figure III readily recall to mind the poorly nourished, delicate, abnormally developing child so frequently brought to the physician for treatment. Could it be expected that such devitalized and distorted human beings would be able to combat and to overcome the many diseases of childhood?

Fig. 3.
A type frequently seen. This condition hinders proper development and increases the tendency to pathological changes.

The significance of the foregoing facts is plain. To improve the body potential, or to correct strain resulting from certain postural defects, is largely a problem in mechanics. It means that in the treatment of pulmonary diseases, development of the chest should also be considered, so that every

possible usable lung space may be obtained. In cardiac cases the position should be such that the heart will have the least work to do.

In visceroptosis[12] and other gastro-intestinal conditions,[7] endeavor should be made to readjust abdominal support, so that the organs will be as nearly normal as possible.[11]

Before discharging obstetrical patients, instructions should be given in methods for re-toning abdominal muscles and the ligaments holding together the pelvic girdle, as well as improving the general vitality.

In faulty posture due chiefly to defective supporting structures, complete correction must be made of all the defects.[10] For instance, where both hip and foot are involved, it is not sufficient to treat the foot condition alone; the hip must also receive attention.

In epilepsy, the anemias,[8] disturbances of the thyroid, obscure malfunctioning of certain ductless glands, and particularly the vascular system,[4] favorable results are being obtained, by the employment of special postures, in addition to the most efficient scientific methods of treatment. If this is so, it is evidently brought about by the readjusting the various organs to their normal anatomical positions, thereby assisting in their normal physiological functions.

In the industrial world the individual should be selected according to the anatomical type best fitted for the special kind of work he is to do, so that he will prove most efficient both to himself and his employer,[1 5 9]

A great responsibility rests upon those who have the immediate direction and education of our school children.[2] The latest and best methods should be employed in searching out physical impairments.[14] The early correction of these defects should be instituted at once and the treatment of the cases rigidly and faithfully continued until the best possible cure has been obtained.

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FRACTURES IN WAR TIME.*

By LEO ELOESSER, M. D., San Francisco.

In complying with the kind invitation of Dr. L. L. Stanley to talk to you on some topic from military surgery, I have chosen the subject of fractures as being one of more general interest.

The material of a military hospital is, thank God, very different to that seen in a civil practice. The fractures are much more severe than those that we meet in our daily work. Still the treatment of compound fractures remains the same in peace or war, and I think that experience gained among the wounded may be of some interest and value in civil life.

The great mass of fractures seen in military practice is compound—there are simple fractures too, of course. Men fall down in the trenches or are run over or struck by heavy objects in the field as well as at home. These, however, I shall not consider to-night.

The effect of a flying missile on the bone varies as the product of its mass and its velocity, somewhat also with its shape at the moment of impact and with the mass and texture of the bone. Most wounds are caused either by small caliber projectiles—i. e., bullets fired from a hand rifle or a machine gun, by fragments of shell, or by shrapnel.

The modern small caliber bullet has a high velocity, 2000 feet a second and more, not only at the muzzle of the rifle, but for a great distance along its course. It carries over 1500 yards with a velocity of 900 feet and has an energy at this distance sufficient not only to pierce a bone, but considerable to spare after shattering it. At short range every bullet has a more or less explosive effect, and acts not only parallel but at more or less acute angles to its line of flight. One may explain the difference somewhat in this way:

If the bullet strikes a bone near the end of its flight, when its energy is almost expended, the particles struck will abate this remnant of energy to zero, and will be moved out of their positions but slowly; they will be pushed aside if they are of a texture sufficiently yielding, so that the bone will be pierced by a hole little larger than the caliber of the bullet, or, if the bone struck is of a firmer texture, a chip will be knocked out of it whose flight will soon be stopped by the opposing adjacent tissues. If, on the other hand, a bullet strikes a bone with the energy that has been imparted to it in the barrel of the rifle but little diminished, it will move the particles struck, not a little and comparatively slowly, but violently from their positions; and they in turn will fly onward as secondary missiles, hurling other chips from their path; these then will be projected further as tertiary missiles, and so on, until the entire energy lost by the bullet on impact with its target has been expended. Now some of the bone is struck, not squarely end on, but sideways; its fragments are hurled at angles to the path of the bullet, and they in turn hurl other fragments at

* Read at Marin County Medical Society, July 13, 1916, and at San Francisco County Medical Society, October 17, 1916.

angles to theirs, so that there results a conical wound, small at the apex, just large enough to admit the bullet, increasing in diameter, as secondary and tertiary missiles cover greater and greater areas. (See Fig. 1.)

Fig. 1.
Short range fracture (explosive violence).

In the early part of the war these fractures led to accusations on both sides of the use of illegal ammunition—the dum-dum bullet—a bullet with a hollow tip or a tip from which the nickel casing had been removed. Many of the accusations were, I think, unwarranted. Every bullet can act like a dum-dum, it being not the bullet itself that has this explosive violence, but splinters of bone and other tissues acting as secondary missiles.

Midway between true large caliber ammunition and the rifle bullet stands shrapnel. Shrapnel consists of two or three hundred leaden bullets encased in a shell. They have a high enough initial velocity, but the explosive charge acts only for an instant. The moment the shell bursts the exploding gases are released and no longer act on the missile, so that its velocity is soon spent. Even at moderate ranges from the site of explosion, shrapnel will patter down harmlessly like hail upon a roof, will pierce the clothing and fall down into the man's underclothes, or penetrate the skin but a short distance; at close range, however, they produce fractures. The bone usually stops the bullet, so that we find the lead scattered about promiscuously in the tissues, or find the shrapnel perhaps split in two somewhere under the skin opposite the wound of entrance.

The worst fractures are caused by fragments of shell. You can readily imagine the destruction the larger pieces (Vd. Fig. 3) might make, but even small ones may cause horrible injuries. Bones are sometimes shattered by a fragment no larger than a pea. The force of the exploding shell is enormous—it throws the man into the air or on to the ground, twists his limbs about, and puts his muscles under sudden and unwonted strains against which he is powerless to defend himself. It needs but a small additional force acting directly on the bone to make it snap.

As to the various forms of fracture: We find all kinds. In the first place, infractions without breaks of continuity. The bullet may simply pierce a hole through the bone without breaking it off, especially at the epiphyses, which are spongy and not brittle and offer little resistance. The head and neck of the femur and the head of the tibia are favorite sites for this kind of fracture. A missile may pierce the bone and stick in the marrow, so that we have a wound of entry but none of exit. Penetrating but non-perforating fractures of the skull are similar injuries, only that instead of sticking in the marrow, the projectile imbeds itself in the brain. In fractures both of the long bones and of the skull, the shot knocks out a pyramidal piece of bone, the base of the pyramid being toward the inside. (Fig. 4.) These are dangerous fractures. A bullet carries infectious material into the closed marrow cavity, and septic osteomyelitis and long-continued attacks of fever often follow. Another fracture without a break in continuity is one where the bullet has grazed or glanced off the bone and split a chip from its side. A nearly spent bullet may strike squarely but with little force, bend the bone and spread it

Fig. 2.
Fragment of hand grenade (upper fragment) and four shrapnel bullets.

into longitudinal fissures, but not break it through. One often sees these fissures in the tibia. Complete fractures are as varied as the incomplete ones. A blunt missile of considerable bulk, but moving with no great speed, shrapnel for instance, may

produce a clean transverse fracture, like the kick of a horse or the blow of a club—there may be longitudinal fissures running out from the transverse break—perhaps the slower giving way under a lateral bending strain or the weight of the man's body falling to one side, or the tension of the muscles may have this effect. Then we have the butterfly fractures one reads so much about. The missile may smash the bone into dozens of small pieces, either because of its weight (the most exorbitant things have been removed from men's bodies, a whole fuse cap weighing several pounds is no great rarity), or because of its great velocity, which as we saw before may give to any projectile an explosive effect.

The damage done is much greater when the bullet turns before it strikes and hits the bone side on; the surface over which it acts is greater and its energy carried further along the bone to the soft parts. Quite remarkable are the fractures produced by indirect and direct violence combined. The more one looks for this combination the oftener does it come to one's notice; in fact, even in gunshot wounds, the direct fracture par excellence, it is rare to see a fracture that does not show some effects of indirect violence, of a bending or a twisting strain due to the weight of the man in falling or to reflex efforts of his muscles in saving his limb from injury. My attention was first called to this in a discussion with Dr. Rixford on a man at the old City and County Hospital. A burglar had been shot in the leg below the knee—his bone was not shattered in the path of the bullet, however, but quite at a distance. He had a spiral fracture of the tibia—a *spiral fracture,* that is, one that can only be the result of indirect violence; for it is impossible to imagine a bullet twisting a bone asunder. The bullet must have started the spring in the texture of the bone, but once started the final nature of the break must have been determined by the man's fall or his efforts to save himself from falling. He described quite well how he was caught in a sand lot and how he twisted his body in coming to the ground.

Whereas these anatomical considerations have some influence on the clinical course of fractures and a square even break is naturally easier to treat than one that shows dozens of splinters, the form of fracture is but a minor matter—what does make a difference and determines life or death, is infection.

Von Bergmann, the father of modern military surgery, formulated his basic principles of treatment on the theory that small caliber missiles and the wounds produced by them were primarily sterile. His teachings have been an incalculable blessing, but everyone is agreed, I think, that his premises were wrong. Gunshot wounds, even small caliber ones, are not sterile—they are all of them primarily infected, as recent bacteriological examinations of fresh wounds have shown. The theories of how gunshot wounds were sterilized and what made them sterile as long as they were not infected from without, the theories of sterilization by heat developed through impact of the bullet, etc., etc., always seemed forced; recent investigations have shown that the findings on which they were based were inaccurate. The wound is practically always infected, but it need not always show clinical signs of infection. Trouble only begins when the infection is unusually virulent, when there are tetanus or gas bacilli in a wound, or when there are added to the infection other factors that make it difficult for the body to fight the invading germs; when there is bruising and mangling of tissues, much bleeding and clotting, foreign bodies and dirt and other dead material from inside or out. Dirt is the determining factor. One has to see these poor fellows to know what it means—see the ragged mangled wounds, open them, pick out fragments of shell incrusted with dirt and rust, bits of gray cloth, shreds of uniform and underclothing and leather matted into the muscles, and smell the horrible stench that comes from them. The nature of the fracture makes some difference, of course. When a thigh is shattered for a distance of six inches or more, when a leg is tense, all the intermuscular spaces full of blood clot, the muscles themselves dark brown and hard with hemorrhage from the knee to the hip; when there is a wound the size of one's hand, from which tags and shreds of fascia and muscle hang; when the ends of a broken bone have ground dirt into a limb during the long ride from the trenches to a field hospital, then infection spreads through the mangled flesh like wildfire, and the next days and weeks are a long fight for limb and life.

It is the infection, its nature, its virulence and the ground it has to spread in, that determine the course of fractures in war time. The wounds are all infected bacteriologically, it is true, but all are not infected clinically, especially the small caliber wounds. If a rifle shot with a small wound of entry and of exit comes into our hands early, and we reduce the deformity and set the part at rest with a well-fitting splint at once, the fracture will often heal simply and smoothly without fever and suppuration, in spite of the bacteriologically demonstrable infection. I do not fancy that the first dressing plays a great part. A man must have a particularly pernicious genius to infect a fracture from the outside. It can be done by boring into the wound with one's fingers or something of the kind, but I do not think that the first dressing makes much difference. It does not even seem to make much difference whether the wound is dressed or not. The deep parts are soon sealed off by a blood-clot or by the muscle and fascia sliding one over the other like a valve. (Fig. 5.) Some wounds may suppurate superficially but heal quite kindly in the depths. Others, particularly wounds from artillery projectiles, are so badly infected from the start and the conditions for healing are so poor, that their course is bound to be stormy unless something is done. If the quantities of infected exudate and products of decomposition of blood and dead tissue are too great to escape from the depths of the wound, they travel into the preformed loose spaces between the muscles and fascia, into bursae and lymph channels. For the first few days the man is comparatively

Fig. 3.
Fragments of shell.

well; he is sent off by hospital train, the journey shakes him considerably, he is lifted on and off stretchers two or three times and he arrives at the home hospital with a fever of 104° or 105°, with an evil-smelling wound that shows a thick fibrinous membrane, with a dry tongue, an anxious or a stupid expression and trembling hands. There is a long course of sepsis ahead.

Now as to treatment. Treatment is difficult—every fracture offers different problems and every one is difficult to treat justly—no matter how great one's experience. Which fracture to let alone, which to treat by open operation, when to operate, how much to risk for the sake of ultimate recovery of function and when to undertake the risk—all these questions recur again and again at a fracture patient's bedside; they keep one thinking and deliberating and accompany one when one leaves the ward, dissatisfied and full of doubt as to the wisdom of one's procedure. We here at home have the advantage of being free to act unhampered by military exigencies. Urgency of hospital evacuation and questions of transportation guide and often determine the army surgeon's course. I shall leave them aside, as they are of tactical rather than medical interest.

With certain types of fracture there can be little doubt as to treatment. To take two extremes, the simpler one first: a fracture from a gunshot, say at a distance of from one to two thousand yards with little splintering, a small wound of entrance and a similar one of exit. Here we can risk conservative treatment, reduce the deformity, immobilize the limb with a splint—plaster of paris is best—and watch and wait. As gunshot wounds are usually covered by a scab, it is best to fenestrate the plaster so as to be able to dress the wound at reasonable intervals without disturbing the limb. If one includes the dressing in the cast and lets it stay, pus accumulates under the scab, and I think that in certain cases it may burrow its way into the deep parts and secondarily infect them.

These are the simple cases that have a course almost like an uncomplicated fracture.

On the other extreme are wounded struck by fragments of shell such as are shown in the figure; they come in with a jagged wound of entrance, perhaps none of exit, their thighs rapidly swell to a vast size, and one can tell by palpation and by deformity even without an X-ray that the bone is badly shattered. To let these patients alone, to merely dress their wounds and apply a splint, is to invite disaster. The wounds are often remarkably small, smaller than the diameter of the projectile that caused them. They are closed by the retraction of the skin and the valve-like action of the muscles and fascia beneath; enclosed in them are great masses of blood-clot and bruised and dead muscle and fascia. They should be opened by generous intermuscular incisions that release the dead parts and the exudate around the bone from all pressure. The fascia should be further slackened if necessary, by incisions perpendicular to the lips of the wound.

A little fever need not make us over anxious. Every jarring and moving of the fracture, every change of dressing or attempt at reduction is followed by fever. One is inclined to regard the fever too seriously at first and to do too much. If the man is let alone his temperature will usually fall in a few days. If one worries, changes dressings, takes off splints and puts them on again, the man never comes to rest—he never gets a chance, and the continual movement alone, the transportation from bed to operating-room suffices to send him from bad to worse. The thing to do is to get the fracture in proper shape at the beginning

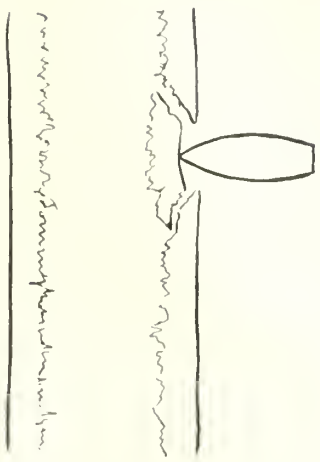

Fig. 4.
Long range fracture without break in continuity. Pyramidal chip, base towards medullary cavity.

as soon as possible, and at one sitting, even at the risk of some trauma—although the less trauma the smoother the course—and then let the man be—to wait—and not to harass the poor fellow with change of splints and traction apparatus in a vain endeavor to satisfy an insistent X-ray conscience. In a week or so his temperature will usually be near normal, then we may split the cast or saw it through and correct the deformity by various methods of extension and push and pull.

How to treat the bone depends upon the nature of the fracture. Entirely free fragments should be removed, but bone that hangs by its periosteum, no matter how loosely, should be left. If the two main fragments can be brought together without much trouble they should be fastened either by engaging their ends or by surrounding them with a loop of wire—picture cord is good and strong—the ends of the wire should be left long and hanging out of the wound. It is often possible to get fragments into some kind of apposition even in badly shattered fractures. The fastening need not be very secure—the plaster of paris splint will hold the parts together if we can but steady them until we get the splint on. Needless to say, no attempt should be made at an anatomically perfect restitution—this involves too much trauma. Lane plates are out of place; the bone should not be denuded of periosteum. The wound should be drained; how is no great matter, something that will not stick to the raw surface is best. Soft sheet rubber or old rubber gloves make excellent drains, or gauze spread with vaseline or some other ointment. The incision should be left wide open and the cast generously fenestrated—a fenestrated cast is much better than an interrupted one; that is, one put on in sections with iron or aluminum bands bridging the space between the plaster. If one has the chance to treat fractures early in this way they will usually run a fairly smooth course without sepsis. The most difficult ones to treat are those where this prophylactic operation has been delayed or has not been done.

Wounded coming in a week or two after injury with fever and sepsis, take all a man has of judgment and foresight and courage and perseverance. Each case is different. It is hard to lay down general rules. Usually, however, one inclines to do too much, even in these cases. We must consider that the infection has already spread, often far beyond reach of the knife. Amputation is a remedy, it is true, but I have not had the courage to do it. It is easy for the surgeon and saves the patient a long course of illness—saves lives too, but who would not risk his life while there was a chance of saving his limb. With sufficient care on the part of the surgeon and sufficient opportunity for watching the course of the sepsis, incising abscesses as they appear and draining when necessary, need for amputation is rare. I amputated only those limbs that were gangrenous and have not regretted waiting. These late cases should be treated much like the first simple category—by watching them, incising abscesses (being on the lookout for them), by immobilizing and giving the patient rest.

The problem of dressing wounds that often reach from the knee to the hip and of still keeping the parts quiet, has not been solved quite satisfactorily; however, it is certain that most surgeons accustomed to the clean dressings of well-regulated civil hospitals are inclined at first to dress and disturb a wound too often.

The most difficult question of all is how much to risk for the sake of future function—in which cases and at what time to attempt a reduction of the deformity, when to change plaster for traction, whether to make a sudden traction, reduce the deformity once and for all and then immobilize, or whether to use a less rough method of extension acting over a period of days or weeks. To discuss these questions would take the whole evening, but I may say that an attempt at reduction and proper alignment as soon as the patient's condition at all permits, is not only desirable from the standpoint of his future usefulness, but seems to help restore his general health. Often one sees local inflammation and suppuration cease and sepsis disappear after a reduction that puts into their proper place fragments jammed into an irritated musculature. The gentlest and usually the safest way to reduce is by continuous traction on the suspended limb. The disadvantage to this method is the difficulty of keeping the limb quiet and especially of avoiding pressure sores. Ansinn's apparatus seems not to produce them, his results are astonishingly good.[1]

For combating sepsis, plenty of water, drop enemas with digalen and adrenalin 20 drops of each to a quart of tap water, four hours on and four hours off, have been useful. Better yet in desperate cases is blood transfusion. A number of men with pinched noses, sunken eyes, dry tongues, weak, apathetic and emaciated, seemingly marked by death, have turned for the better after transfusion and have recovered.

And now to conclude, I am not sure of myself and do not know whether I ever shall be as to the best way of treating each individual case. But I am convinced of one thing, and that is, not to

1 Beitr. z. Klin. Chir., Vol. 97, pp. 97 and 559.

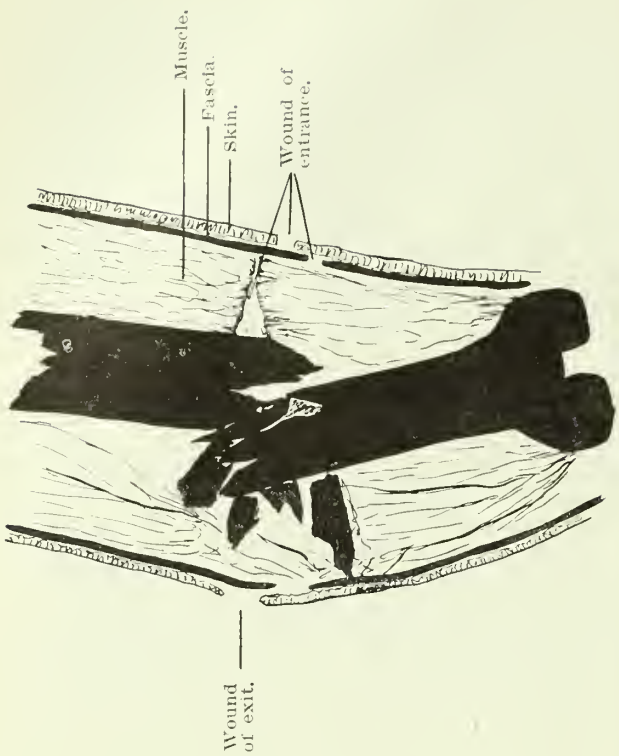

Fig. 5.
Valve-like closure of wound-channel by shifting in relative position of soft parts after fracture.

let the fractures go simply because they are complicated. An open wound and sepsis is no excuse for disregarding ultimate function. On the contrary, if one gets the fracture into decent alignment, gets a limb that looks something like a proper human extremity, the sepsis usually quiets down and the man's general health improves. If one is afraid of sepsis, and contents oneself with immobilization without regard for further function, the men certainly do no better, often not as well as after a correct reposition; and when they do get well, the sight of these poor cripples hobbling about on crooked and useless and painful limbs is a lasting reproach. It is right to risk considerable, even to risk life now and then for the sake of future activity.

I lost a few cases by not amputating, but had I the work to do over again, I should still take risks if need be, to prevent future crippling disablement. It is not only bare existence we must consider, a useful and active life is what one must offer a man, even though he risk dying to attain it. The dangers of a feverish sick-bed are soon forgotten, a distorted and painful limb, disability and pauperism are with a man as long as he lives.

In short: Do not let the fear of sepsis overshadow the ultimate goal, restoration of useful function. Keep this end in mind and work toward it from the very beginning. It is not difficult to attain if taken in hand early. Do what is necessary at once. Do not leave the patient until you are satisfied, then let him be and God will take care of him.

"Je le pansay, Dieu le guerit," said Ambroise Paré.

LEUKOPENIA, ITS SIGNIFICANCE.*

FROM THE DEPARTMENT OF CLINICAL MEDICINE OF THE SAN FRANCISCO POLYCLINIC.

By JOSEPH H. CATTON, M. D., San Francisco.

Leukocytosis is one of the most valuable aids in diagnosis. While the presence of a leukopenia has been made use of in the diagnosis of malaria, typhoid, influenza and Banti's disease; and its appearance has been regarded as ominous when it has replaced an expected leukocytosis, as in pneumonia, —nevertheless its full significance has been unappreciated. Standard texts on diagnosis and many works on hematology dismiss leukopenia with a paragraph, and often it is simply referred to as the absence of leukocytosis. Ehrlich [22] has said "a reduction in the number of white cells plays a very unimportant role in comparison to their increase."

And yet—a leukopenia is, in certain cases, just as definitely a sign that the polynuclear cells have migrated to the lungs [4] or elsewhere, as is a leukocytosis that they have gathered in the peripheral circulation: An absence of chemotaxis or a negative chemotaxis is just as important as a positive chemotaxis.

A leukopenia is, in other cases, just as definite a mark of destruction of myelocytic bone marrow, as is a leukocytosis of its stimulation.

A leukopenia may mean an increased destruction of the leukocytes as they lie in the blood stream or in the spleen, and a sign which points to the destruction of a tissue, is, to the author, more, rather than less important, than one which points to its stimulation.

And so, this communication is a plea to give leukopenia more consideration as a diagnostic aid, and it will point out that its presence is significant because—(1) leukopenia is related to lymphocytosis, (2) it is an expression of a diminution of the total result of polynuclear function, (3) it marks the presence of certain diseases and (4) it is an indicator of tendency toward certain symptoms, syndromes and diseases.

Relation to lymphocytosis. Much has been written during the past three or four years concerning the differential leukocyte count; and statements have been made regarding the frequency of low polynuclear and high lymphocytic percentages [38]; and caution has been given that too much importance must not be attached to these signs [9-38-40]. The several authors have established one thing definitely—that these blood findings are not infrequent; this communication confirms this fact but insists that they are significant.

Health means balanced metabolism. Under given conditions, the healthy stomach secretes a certain amount of HCl; if too much, or too little is secreted, well known clinical signs and symptoms may be present. The more narrow are kept the normal limits of amount of secretion, and the more insistently is demanded cause of variance from these narrow limits the more exact will be diagnosis. Such considerations apply equally as well to the leukocyte relations.

There are normal limits within which the num-

* Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 20th, 1916.

ber of polynuclear leukocytes may vary, relatively or absolutely in health, and too great a reduction in the number of these cells usually gives disturbance from two sources; (1) from the lack of the polynuclear cells themselves and (2) from a relative increase in the mononuclear cells, for a leukopenia is usually accompanied by a relative lymphocytosis, and for the following reasons.

The various leukocytes, in addition to their more specific functions, have certain functions in common; and so the polynuclears as a class, may in certain measure, take the place of, or compensate for the mononuclears as a class. So, it is found that the leukoblastic and the lymphoblastic tissues are rarely equally stimulated or depressed together, and a leukopenia is usually accompanied by a relative lymphocytosis, and a lymphocytosis by a relative decrease in the number of polynuclear cells. Staines, Jones and Rosenberg[49] find that total white counts in New York and Colorado Springs average the same, namely 7500 cells per cmm., and that while the lymphocytes are increased 20% to 30% at the higher altitude, the polynuclears are decreased in the same proportion. Buchanan[8] says a leukopenia is invariably accompanied by lymphocytosis; in extensive studies Andrews[4] noted that the polynuclear and the lymphocytic cells did not vary together; the same has been found the rule in the University of California and San Francisco Polyclinic wards of the San Francisco Hospital. It may be noted in the list of causes of leukopenia given in this paper how often a leukopenia and a lymphocytosis tend to be associated. Then a goodly portion of the significance of lymphocytosis may be claimed as also related to leukopenia.

Regarding the functions of the polynuclear leukocyte. The value of a cell depends on its functions, and each and every function of the polynuclear or the lymphocytic cell will, when sufficiently investigated, be found to have definite clinical significance. A diminution in the number of polynuclear cells means a loss, proportionately, of the results of its activities. So, one must consider the specific functions of the polynuclear cell as contrasted with those of the mononuclears, for it has been mentioned that a leukopenia means always a loss in the specific accomplishments of the polynuclear, and in the majority of cases, a probable gain in the specific accomplishments of the mononuclear cells.

Chemotaxis. Certain bacteria living or dead, bacterial extractives, copper, mercury, and products of cell destruction (including those of the leukocytes) have been found to exert a positive chemotaxis on the polynuclear and not the mononuclear leukocytes[53-59]; and, with the possible exception of tuberculin no agent has been proven to exert a similar attraction on the mononuclear cells. Similarly, certain extremely virulent bacteria, tetanus toxin[53-59] and anaphylotoxin[59] exert a negative chemotaxis specifically on the polynuclear cells, and no agent has been proven to so affect the mononuclear cells. Then, a leukopenia may indicate the absence of a positively chemotactic, or the presence of a negatively chemotactic agent.

Motility. While motility may be demonstrated in all the leukocytes, the polynuclear cells show this characteristic much more definitely.

Phagocytosis. The polynuclear leukocytes are essentially concerned with the ingestion of certain bacteria, while the mononuclear leukocytes together with certain fixed tissue cells are concerned with the ingestion of animal cells whether native or foreign, and the latter may include the red cells and the polynuclear cells of the organism itself. An importance for leukopenia is apparent when these functions are considered.

Metabolism. The leukocytes play a very important role in transporting food material,[28-44] and here again each variety is found subserving different functions. While it has been demonstrated that both the polynuclear and the mononuclear cells contain proteolytic ferments, those of the former act only in a weakly alkaline medium, and the mononuclear leukoprotease acts in a weakly acid one.[59] Gruner,[25] of Leeds, finds definite and characteristic changes in the polynuclear nuclei during, and only during, the digestion of proteid: glycogen is carried by the polynuclears in diabetes and certain other conditions and can be demonstrated by the familiar iodine reaction.[22] A leukopenia means a loss of the results of these functions. Bergel[5] and others have shown that various lymphocytic extractives will digest fats; and other investigators[6-50] that the lymphocyte may carry, emulsify and saponify fats. These findings are of interest when one considers the relation between leukopenia and lymphocytosis.

Other differences. Lymphocytic extracts are hemolytic for they contain fatty acids and soaps, and in addition a hemolysin[53]; extracts of polynuclear cells contain no such agents. Polynuclear extracts are strongly germicidal, lymphocytic extracts only weakly so. The reaction within a polynuclear during phagocytosis is acid: within a giant cell it is alkaline.[53] The viscosity of the blood decreases in proportion to the leukopenia.[49]

And now, although there is considerable evidence that the intra and extracellular ferments of the blood are not identical[59]: nevertheless the extractives of the two great varieties of leukocytes have been shown to have different properties, and the blood stream is continuously receiving the products of the disintegration of these cells. And so, is a significance suggested for leukopenia on the basis of loss of the specific accomplishments of the polynuclear cell.

Conditions in which Leukopenia has been found more or less characteristic. A discussion of the mechanism of leukopenia will require another paper, but it may be mentioned here that it may occur as the result of (1) underproduction, (2) overdestruction and (3) altered distribution of the polynuclear cells. The list below includes those conditions in which a leukopenia has been found more or less characteristic; and, because the list is long does not mean that the sign may be of little value in diagnosis—for a neuralgia, or paraesthesia or a leukocytosis—each may, *per se*, suggest a similar number of etiological factors and these symp-

toms and signs are not therefore dismissed as of little value.

Reduction in the number of polynuclear cells as measured in peripheral circulation may occur:

I. *Physiologically,*

(a) Absolute reduction in number of polynuclears.
(1) Certain vaso-motor conditions.

(b) Relative reduction due to lymphocytic increase.
(1) Infants, (2) during digestion and (3) certain vaso-motor disturbances.

II. *Pathologically,*

(A) *In certain exogenous infectious intoxications.*

(1) Preceding the infectious leukocytoses.[1-4-19-35].

(2) Bacterial.
(a) Absolute reduction:—influenza, malta fever [52-57] and severe and fatal infection.
(b) Absolute reduction+relative increase in lymphocytes:—typhoid,[29-36] typhus,[37] tuberculosis [15] and leprosy.[17]
(c) Relative reduction due to lymphocytic increase:—pertussis, certain tonsillitidies [11], and during prolonged lysis in pneumonia.[24].

(3) Other parasitic infections.
(a) Absolute reduction:—kala azar.[52]
(b) Absolute reduction+relative increase in lymphocytes:—malaria, syphilis, trypanosomiasis, dengue [52] and in some cases of amoebic dysentery.[23]
(c) Relative reduction due to lymphocytic increase:—filariasis.[51]

(4) Infections of unknown etiology.
(a) Absolute reduction:—german measles.
(b) Absolute reduction+relative increase in lymphocytes:—measles, mumps, and certain cases of smallpox [12-16] and scarlet fever.[12].
(c) Relative reduction due to lymphocytic increase:—certain acute and chronic infections in infants.

(B) *Exogenous non-infectious intoxications.*

(1) Inorganic matter.
(a) Absolute reduction:—mercury and arsenic.[23]
(b) Absolute reduction+relative increase in lymphocytes:—lead.[20-23].
(c) Relative reduction due to increase in lymphocytes:—iodine.[27-32].

(2) Organic matter, drugs, etc.
(a) Absolute reduction:—alcohol, morphine, ether,[23] ergot, tannic acid, atropin, picrotoxin, agaracin, sulfonal,[8] curare,[43] and benzol.[30]
(b) Absolute reduction+relative increase in lymphocytes:—quinine.[8]
(c) Relative reduction due to lymphocytic increase:—pilocarpine and lecithin.[27].

(3) Injections of foreign proteid, etc.
(a) Absolute reduction:—peptone, diastase,[8] various sera,[8-27] hemialbumose,[43] living and dead micro-organisms,[35] bile salts, pancreatin, bacterial toxins and trypsin.[2-3]
(b) Absolute reduction + relative increase in lymphocytes:—bacterial cultures.[23-35].
(c) Relative reduction due to increase in lymphocytes:—tuberculin, thyroid, dead "non-toxic" animal matter and bacterial filtrates.[23]

(4) Anaphylaxis.[59].

(C) *Dyscrasic and other intoxications in the course of constitutional disease.*

(1) In diseases of the blood and lymphatic systems.
(a) Absolute reduction:—certain purpuras,[13] hemaglobinurea,[23] splenic anemia, aplastic anemia, aleukemic lymphadenomata, and polycythemia.[13]
(b) Absolute reduction+relative increase in lymphocytes:—pernicious anemia, chlorosis,[18-27] severe secondary anemias,[57] hemophilia,[23-24] severe anemias with gastro intestinal disturbances in children,[8] and splenic anemia.
(c) Relative reduction due to increase in lymphocytes:—scurvy,[23-24] the leukemias, malignant lymphadenomata, sarcoma multiplex cutis, parasitic anemias [8-24] and following splenectomy.[41]

(2) In ductless gland disturbance,
(a) Absolute reduction:—following thymectomy[54]; and in about half the cases of hypophysis, thyroid and adrenal disturbance, and in lymphatism.[7]
(b) Relative reduction due to increase in the lymphocytes:—majority of cases of thyroid, hypophysis and adrenal disturbance and in lymphatism [7];

(3) Other constitutional disturbances,
(a) Absolute decrease:—starvation, severe and overwhelming toxemias and exhaustion.
(b) Absolute decrease + relative increase in lymphocytes:—malnutrition.
(c) Relative decrease due to increase in lymphocytes:—various cachexias including malignancy, rickets, hepatic cirrhosis, gastro-intestinal upsets in children and debility from any cause.[13]

(D) *Vasomotor disturbances.*
(a) Absolute decrease:—prolonged exposure to cold, short exposure to heat, prolonged baths whether hot or cold,[11] severe trauma,[27] shock [19-27] and application of irritants to the skin.[39]
(b) Absolute reduction + relative increase in lymphocytes:—hay fever.*
(c) Relative reduction due to increase in lymphocytes:—following adrenalin in an individual, with an irritable sympathetic nervous system, or sometimes following the injection of pilocarpine.[39]

(E) *Following the use of rays.*
(a) Absolute reduction:—thorium X.[26]
(b) Absolute reduction + relative increase in lymphocytes:—x-ray.[10]

(F) *Unknown causes.*

These relations are definite and warranted by

* Ewart. Prog. Med., Sept., 1915, p. 93.

just such experimental investigation and clinical observation as have placed leukocytosis among the most important of diagnostic aids.

A Measure of Diathesis. And now, it is suggested that a leukopenia may be most significant as an indicator of tendency toward disease.

A previous communication [12] considered the etiology of orchitis, studied the leukocyte pictures in the infection reaching the testes through the blood stream, recorded the observation of testicular affection in an individual having a history of seven infectious diseases, six of which cause leukopenia—and at the same time who exhibited a leukopenia—and offered the suggestion that a reduction in the number of polynuclear leukocytes indicated a tendency toward orchitis.

A second communication [13] considered neuralgia and leukopenia, and showed that a relative or absolute reduction in the number of polynuclear cells was characteristic of the various infectious and non-infectious intoxications, of certain ductless gland upsets, of exposure to cold, of debility and of malnutrition—all of which conditions are likewise etiological in neuralgia.

It was further found [14] that elective bronchitis is usually the result of leukopenic infection.

A study of the etiology of tetany seems to indicate that here, too, a leukopenia may serve as a warning sign.

Most of the infectious diseases preceding lymphatic leukemia, some of which have been thought, at various times, to have been its cause, seem to give the leukopenia warning. It is interesting in this connection to read the case histories in Dr. Wilbur's paper on "Leukemia, an Infection." [56] Case No. 1 had had measles, mumps and whooping cough, all causes of a relative or absolute reduction in the number of polynuclear cells; had no leukocytotic diseases, and until his developing acute lymphatic leukemia, gave a normal total white count, but the low polynuclear count, namely, 41 to 48%. Case No. 2 had had smallpox. A polynuclear leukocytosis has been variously reported in smallpox, but it was shown in a previous study [12] that a. the number of leukocytes may be normal, b. violent and hemorrhagic cases may present a leukopenia, c. mild cases may show subnormal counts and d. the increase in cells at pustulation is due largely to lymphocytes. Neither had this case a history of other leukocytotic infections. Case No. 3 had had three attacks of malaria; and syphilis; both are causes of blood pictures under discussion; also gave history of frequent "colds" toward which leukopenic diseases predispose; had had no leukocytotic diseases. Similarly, a case coming under the observation of Dr. Ebright and the author presented a leukopenia for several years, without determined etiology, and suddenly developed the picture of acute lymphatic leukemia. As Dr. Wilbur says, "it is probable that organisms of low virulence, but of various kinds, may, working in a soil prepared by previous infections, bring about the leukemic reaction." The four cases mentioned and the studies so far carried out, prompt the author to suggest investigation as to whether the leukopenic infections are not usually the ones that prepare the soil for future lymphatic leukemias.

Disturbed leukocyte balance with low polynuclears may also warn against tuberculosis, the latter disease frequently having its incipiency in measles, or pertussis, or during prolonged overfatigue, or following typhoid,[21] all of which conditions tend to give the blood pictures mentioned.

The relations of leukopenia to these, and other symptoms, syndromes and diseases are being further investigated, as are its relations to tendency toward hemorrhage, to disturbance in calcium metabolism and other conditions.

In summary:

1. Leukopenia bears a definite relation to lymphocytosis.

2. Leukopenia, in proportion to its degree, expresses a loss in the specific accomplishments of the polynuclear cell.

3. Leukopenia marks the presence of certain diseases.

4. Leukopenia is an indicator of tendency toward orchitis, neuralgia, elective bronchitis, and other symptoms, syndromes and diseases.

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SUBDELTOID BURSITIS.*

By SAXTON TEMPLE POPE, M. D., San Francisco.

Subdeltoid bursitis has been called many names: periarthritis, brachial neuritis, circumflex neuritis, and rehumatism; but Codman first gave an accurate description of the disease and dictated its cure.

It is a disease that nearly always results from trauma, seldom from infection. The method of its production is that of excessive abduction of the shoulder joint, in which position the bursa is pinched between the greater tuberosity of the humerus and the acromion. Codman has shown that the supra-spinatus muscle initiates the movement of abduction, and if for any reason this muscle fails to act, its tendon becomes caught beneath the acromion and suffers injury with the bursa during the act of abduction.

The symptoms are local pain, neuritic distress down the arm and across the neck, limited movement, inability to separate the arm from the body, or use the deltoid muscle at all. Pain may be worse at night. Disability may last for weeks in the acute traumatic cases, to years in the adhesive or hyperplastic bursitides. It may completely incapacitate a man for work.

Rest, hot compresses, immobilization are required in the acute cases. If effusion exists, aspiration may assist recovery. Manipulations are curative in some types, especially the adhesive bursitis.

Where disability is prolonged and other methods fail, complete cure can be obtained by dissecting out the bursa. In a series of 24 cases, 15 were treated palliatively, or by manipulation; 3 by aspiration; 6 by operation. The latter gave the highest percentage of cures.

Discussion.

Dr. G. C. Macdonald: I have seen a great number of such cases in sailors, where they have fallen on the deck or other parts of the ship. My experience is that removing the bursa does effect a cure. A man with bursitis is certainly incapacitated, in some cases practically so for life. In very chronic conditions the bursa becomes much enlarged and contains the so-called rice or melon-seed bodies.

* Read before the San Francisco County Medical Society, August 15, 1916.

TWO CASES OF POISONING FROM THE USE OF ALYPIN IN THE URETHRA.*

By LOUIS CLIVE JACOBS, M. D., San Francisco.

The purpose of my talk this evening is to report to you two cases of poisoning from the use of alypin in the urethra.

We find in treating local conditions in the deep urethra that in certain patients it has been found advisable to use a drug locally for the purpose of producing analgesia. The necessity for this arises when one is dealing with a hypersensitive mucous membrane in a person who is unable to stand much pain; when an operative procedure, such as punching out a prostatic bar obstruction, in which cases we have no choice but a local anesthetic, is undertaken; or when removing a large-sized foreign body from the bladder through the operative cystoscope.

We know that the mucosa of the deep urethra is normally more sensitive than the mucous membrane of any other part of the body; and in the mere passage of instruments such as the cysto-urethroscope it has been my practice not to resort to the use of various drugs such as cocaine, novocaine, stovaine, etc. But I have occasionally used alypin in the deep urethra and upon reports of such men as Bransford, Lewis, Willys Meyer, Edward Keyes, Paul Pilcher and other prominent urologists known to you all, I had become converted to the belief that it was without toxic effects.

Bransford Lewis recommends the use of this drug almost indiscriminately. He applies it to the deep urethra in the form of tablets through a small urethral depositor, an instrument which he devised, and states that as soon as the effect of one tablet is worn off another can be deposited in the necessary spot, and that in his experience he has never noticed toxic symptoms from its use.

Though I believe alypin to be as valuable a drug as any which we might use to obtain analgesia in the deep urethra, I must state that it is not without its dangers and the sooner we realize its dangers the better we shall be able to guard against its untoward effects.

Alypin itself is a drug which has been popularized in recent years by a most prominent urologist. Chemically it is listed as a monhydrochloride of benzoyl, etc., and occurs as a white powder, crystalline, very soluble in water and alcohol. Watery solutions have a neutral reaction and are easily sterilized. Hence alypin can be prepared in various solutions of various strengths. Keyes

* Read before the San Francisco County Medical Society, October 31, 1916.

of New York has used as high as 25 cubic centimeters of a 2% solution (8 gr.) in the urethra and bladder without toxic effect. Recent investigators have demonstrated the dependence of toxicity of cocaine and novocaine on the rate at which the drug is absorbed, therefore, I must give this as an explanation of the two cases which I am reporting. Fortunately both of these patients recovered without any permanent effects.

Though literature tells us that Necker observed occasionally by-effects from 3% alypin solutions especially in cases of sphincteric spasm and Garasch twice witnessed poisonous effects after the introduction of 5 cubic centimeters of 2 and 5% solutions respectively, into the urethra. The symptoms consisted of nausea, vomiting, vertigo, dyspnoea, hallucinations and spasms, but subsided quite rapidly without any permanent damage. Garasch believes that toxic manifestations may readily result in exhausted individuals.

On June 24th, Mr. ZY. was referred to me by a general practitioner of this city for a persistent morning discharge for which he had been treating for the last two years. With two drams of 2% solution of alypin injected by pressure through the urinary meatus and held for a few minutes, I was enabled to pass a No. 26 cystourethroscope without any discomfort to the patient and found an enormously enlarged verumontanum with large ejaculatory orifices and dilated discharging ducts. I mention this to emphasize the fact that the examination was a thorough one without any discomfort or distress whatever to the patient. He was immediately enabled to return to work and reported at my office within a few days feeling "tip top," as he expressed it. On July 10th, in order to treat the diseased area in the posterior urethra, I intended to use a large Leurs posterior urethroscope, which I tried to pass but on account of the sensibility of the urethra withdrew it and found there was an escape of a few drops of blood due to the traumatism of the instrument in the anterior urethra. I then injected two drams of 2% alypin solution, waited for a few minutes and then inserted the urethroscope. When the instrument reached the posterior urethra there was a terrific spasm on the part of the patient followed by convulsions which lasted for about five minutes. His respiratory muscles were affected and he was in clonic spasm, followed by a tonic spasm, the face was cyanotic, the pupils dilated and the jaws were locked in spasm. The pulse which was rapid and full became weaker and hardly perceptible. By unlocking the jaws and performing traction on the tongue with artificial respiration I was soon gratified to see the patient again breathing normally, and the pulse as full and strong as previous to the injection. He was conscious but more or less stupefied, unable to remember his name or where he lived, but knew that he was in a doctor's office. It was at least two hours before he felt able to find his way home. Since this time I have treated and examined Mr. ZY., frequently passing instruments into his urethra without the use of local anesthesia and he has never had any repetition of this early attack. His history shows no epilepsy nor any other condition that would have any bearing upon this report.

Case No. 2, was a case of Dr. Henry Meyer's. The patient, a man of 27 years of age, was referred to him for an examination owing to the fact that he had had, several years previously, a kidney removed which was supposed to be tuberculous and an attempt at catheterization of the bladder was made, but due to the highly sensitive urethra it was very painful and the catheter was withdrawn, following which there was a slight bleeding. A two dram dose of a 2% alypin solution was then injected by means of pressure. Within a few minutes, just as the cysto-urethroscope had entered the meatus, there were violent clonic spasms with the complete cessation of respiration, the patient became cyanotic and the pulse was not perceptible. The patient was apparently dead but after artificial respiration with traction on the tongue, respiration was gradually established. It was at least five hours before he had sufficiently recovered to be sent home.

We should take cognizance of the fact that the urethras of these two cases were highly sensitive; also that there was bleeding in both cases before the injection of alypin; that neither could have arisen from the irritation of the instrument alone; and that in Dr. Meyer's case the instrument had not passed beyond the meatus before the patient had convulsions.

From these cases, I draw the following conclusions:

That the toxic symptoms were the result of alypin absorption.

That the development of toxic symptoms is dependent upon the rate of absorption—a rapid absorption and hypersusceptibility of the patient to the drug.

That alypin is absorbed more readily from a lacerated or traumatized mucous membrane of the urethra.

That its toxicological action is first upon the respiratory system and then upon the circulatory system.

That when the mucous membrane is traumatized as evidenced by the escape of blood from the urinary meatus, it is not safe to instill a local anesthetic such as cocaine, alypin, novocaine, etc.

Discussion.

Dr. M. Krotoszyner: The two cases reported by Dr. Jacobs are of great practical importance, since alypin always enjoyed the reputation of combining safety with efficacy as a local anesthetic of the genito-urinary canal. Such symptoms, as observed in these two cases, we were used to see in connection with the employment of cocaine in the urethra, and in my earlier work I have seen distressing, and in one or two instances, most alarming symptoms after injection of small doses of cocaine in the anterior urethra. Absorption of the drug, when injected into the bladder, rarely occurs under normal conditions. The late Nitze was in the habit of injecting two ounces of a 4% cocaine solution into the bladder prior to cystoscopy, and I know of only one accident in connection with that procedure, though I attended a great many cystoscopies at his clinic.

Owing to the dangers of local anesthesia, even

when using small doses of less toxic drugs, like novocaine, I have, for many years past, carried out urethral instrumentation, including cystoscopy, whenever feasible, without the application of any anesthetic, and such experiences, as reported by Dr. Jacobs, will certainly tend to fortify me in continuing in the same manner in the future.

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Journal American Medical Association, May, 1900: B. Lewis.
Journal American Medical Association, January, 1910: B. Lewis.
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American Journal of Urology, February, 1912: H. Lilienthal.
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Deut. Med. Wochensch., No. 49, 1905: Joseph, Max & Kraus.
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INDUSTRIAL ACCIDENTS.

[In this column we shall publish, from time to time, short comments of practical value by men of experience, dealing with special fields of medicine in relation to Industrial Accidents.]

COMMON INJURIES OF THE EYE AND THEIR TREATMENT.

By HANS BARKAN, M. D., San Francisco.

Injuries of the eye form a considerable portion of the bodily injuries that we are called to deal with in the Accident Insurance cases. They of all injuries receive as nearly as I have been able to see in the last two years, the least expert attention, when on the face of it, they require perhaps the most expert. This is, of course, due to the fact that necessity—imposed by immediate need for aid in localities where the attention of a specialist is impossible to obtain—calls for treatment by some one though not an expert.

For the benefit of those who are called upon to attend to these cases before they can be referred to a specialist or who may have to attend to the case for a number of days I would like to make the following points; which, while necessarily very fragmentary, apply to perhaps 60 to 70 per cent. of the ordinary injuries seen.

First: Superficial corneal injuries containing foreign bodies: 4% cocaine 1 drop a minute for five minutes, with the eye closed during this time to prevent drying of the corneal epithelium and the settling of dust upon the insensitive cornea. Removal of foreign body preferably with a dull spud, not a pointed one. If patient cannot hold his eye steady, it helps to make him look at a candle with his sound eye in a dark room. Remove not only the foreign body, but every bit of rust or brown discoloration left; when the body has been gently chipped out, there will be a congested conjunctiva with some evidence of secretion shown by the cilia being stuck together. Evert upper lid and apply 1% silver nitrate with an applicator, pressing this down upon the mucous membrane until this assumes a faint skimmed-milk hue. Leave the eye open for half an hour to an hour until the first desquemation of epithelium has taken place. On the end of a glass rod put any bland ointment into the conjunctival sac and bandage for about six hours. Dark glasses the next day and for a few days a solution of zinc sulph. ½%.

Second: Ulcers of the cornea usually central, with usual antecedent history of the eye being slightly scratched with some object. The majority of cases are pneumococcus ulcers of a uniform yellow gray color, generally with an advancing deeper yellow colored edge.

The immediate treatment should be atropin 1 to 4% 3 to 4 drops the first half hour until the pupil is dilated. With thorough cocanizing apply applicator soaked in tincture of iodine to the ulcer until the entire ulcerated tissue is stained a mahogany brown. Dionin 10% t. i. d. and hot compresses for ten to fifteen minutes every hour, the eye closed between times by a pad or bandage. If at the end of six to twelve hours, the advancing edge is still a deep yellow or has progressed slightly while the body of the ulcer is somewhat cleaner, try zinc sulph. 20% solution with an applicator. Should the edge still advance, the actual cautery should be employed, destroying with it not only the advancing edge, but corneal tissue slightly beyond this.

If an electric cautery is not available, a knitting needle brought to a red hot point in a Bunsen burner will do very nicely. This all provided the ulcer when first seen is small.

By the time a patient is properly attended to—which is often late because the patient has so many times gotten sawdust, grains of wheat, coal or some other object into his eye without injury, that in this particular instance he simply wipes out the foreign body and waits four or five days before consulting the doctor—the ulcer is so large that nothing short of cauterizing the entire surface and beyond the advancing edge will stop it. In these cases such measures as tincture of iodin, zinc sulphate and optochin are useless. The best that can be promised the patient and the insurance company is preservation of the eye ball, but no preservation of vision.

Third: Foreign bodies inside the eye bring forth a multitude of interesting considerations. Those that must not be allowed to stay in are steel, iron, copper, zinc or any other corroding metal. Glass or wood is sometimes kept within the eye without great irritation. I have seen some foreign bodies lodged in the lens, causing of course a traumatic cataract, but not requiring immediate removal, as the lens metabolism is so slow that the eye as a whole is not affected by chemical action of the foreign body.

A word here about X-ray localization. It should be immediately done in every case. If the report states that the object is a number of mm. within the eyeball, one need not doubt the matter. If it is a question, however, of only a mm. or two in or out, it must not be forgotten that taking the refraction into consideration is here a useful point. If the other eye be myopic or a long eye, the chances are that the afflicted eye is approximately of the same condition; if the sound eye be hypermetropic or a short eye, the same conclusion is probably true; the measurement is made for an eye

of approximately 24 mm. in length. It is of importance to realize that if this particular eye is say one of 21 mm. in length or 31 mm. in length depending on how hypermetropic or how myopic it is, it will in one case militate against, in the other favor, the foreign body being in or outside of the eye.

It might, I think, be safely laid down that enucleation is indicated when a foreign body is within the eye, and a frank purulent endophthalmitis has set in. An attempt to preserve the eyeball is here of not much value. At the best, such an eye will shrivel to an unsightly stump and become the object of a period of long treatment and be of no service eventually. Enucleation should be decided on promptly in order to forestall a frank panophthalmitis which if once developed will cause long and tedious hospital stay and treatment.

I have had some interesting experiences with ocular paralysis due to trauma to the orbit. Four of the six have been abducens paralysis, from blows against the temporal orbital margin and temple. Unless the paralysis is complete—that is, if there be a bit of movement left in the direction of the paralyzed muscle—the chances for a quite remarkable return of function within four to six months are very good. One should be very slow about operative proceedings until after a lapse of from four to six months. Another point; diplopia of small amount in the extreme limits of movement of the eyeball, for instance only when looking to the extreme right, or left or up as a result of injuries has very little inconvenience for the patient and should not be taken as a loss to him demanding marked compensation. In the first place, most of the cases get very much accustomed to such diplopia in time; second, it is very seldom bothersome, as compensatory movements of the head are automatically employed to rectify the diplopia; in addition, objects far to the right or left are usually looked at by turning one's head and eyes in that direction, not the eyes alone.

As in all other injuries involving compensation, hysteria and simulation are met with more often than in ordinary practice. I have seen one typical hysterical field of vision following a slight corneal injury with a bit of coal dust, and one hysterical amblyopia lasting three days in a boy of fourteen, whose injury was a broken radius. Another hysteric persisted in an obstinate blepharospasm for months after a trivial injury. A cure for these cases is as many and varied as are the manifestations of hysteria and I will not go into them.

The simulation of blindness or partial blindness is sometimes very easily proved, but there are cases in which justice is not done to the insurance company unless the individual is put in a hospital and observed there under varying conditions, and when he is not aware of observation. In one such case claiming loss of three-fourths of vision whom I saw with Dr. Schaller, it could not be proved that the man saw better than this until he was detected picking off, with great precision and promptness, a fly purposely placed on his food.

State Society Notes

IMPORTANT NOTICE—TO CONTRIBUTING MEMBERS OF THE INDEMNITY DEFENSE FUND.

Notes are now becoming due.

Do not let your membership lapse.

Each member will be informed ten days in advance of the due date of his note.

Copies of the Medical Defense Rules will be mailed direct to each member of the State Society instead of being enclosed in the Journal as previously announced. Anyone not receiving the Rules within a week after receiving his Journal should communicate immediately with the State Secretary. These Rules are for the use of members **only**, and I again call your attention to the importance of not discussing them with any but a fellow member.

Henceforth all dues paid to the State Society through the County will be receipted to the individual by the State Secretary as well as the County Secretary. These receipts should be carefully preserved and may be used as evidence of membership in the Medical Society of the State of California.

SAXTON POPE, Secretary.

OFFICERS RESERVE CORPS AND PENSIONS.

The following letter has been written to the Secretary of War, the Council of National Defense, the Surgeon-General of the U. S. Army, the Secretary and Chairman of the Senate, our two California Senators and eleven Congressmen:

"In the interest of the members of the Medical Society of the State of California, the Council of that organization wishes to know:

"What is the present status of a civilian physician serving in the Medical Section of the Officers Reserve Corps, so far as a pension is concerned?

"It is our understanding that no pension will be provided for the family of a member of this Corps should he lose his life in the service of his country.

"If this be the case, it certainly seems an injustice to the physician who gives up his life work and voluntarily assumes the duties and risks of military service.

"If you can enlighten us on this subject, or suggest any remedy, we will be very glad to hear from you.

"Signed: SAXTON POPE,
"Secretary."

MINUTES OF THE MEETING OF THE PUBLICATION COMMITTEE,

Held May 21, 1917, in the Library of the San Francisco County Medical Society.

Present: Grosse, Reed, Tucker and Hyman.

The following rulings for the guidance of the Committee were passed on motion of Grosse, seconded by Tucker:

1. Original articles for publication in the Journal may be accepted by the Editor.

2. No original article may be rejected unless so decided by at least two members of the Publication Committee, or by at least two specialists, selected by the Editor, in the line of the contents of the paper. The author of any rejected paper may

appeal to the Publication Committee, whose decision is final.

3. No advertisement for any article or institution not approved by the A. M. A. will be accepted.

4. There shall be strict adherence to the advertising rates established by the Finance Committee of the Council. No discounts are to be allowed except to advertising agencies who shall procure copy.

For the information of the committee it was stated that the Council has granted to the committee the same rights of rejection of papers read at the meetings of the society as those independently submitted.

The committee was informed that the advertisement of the Hatteroth Surgical House was dropped for offering commissions to physicians after having been warned not to do so.

It was moved by Grosse, seconded by Tucker, and carried, that the editor make a distinct effort to have all papers read at the meetings of the society submitted to the Journal, and to call especial attention to Article X, Sec. 1, of the By-Laws, which reads: "All papers read before the society or any of its sections shall become its property. Each paper shall be deposited with the secretary when read."

The editor was instructed to communicate with the chairman of the Committee on Scientific Program, and call his attention to this section, to suggest that it be printed in the Official Program, and called to the attention of readers of papers at the time of allotment on the program, and to secure such other cooperation as is advisable.

Chairman instructed to invite Dr. Bering, chairman of the Advertising Committee, to next meeting, for purposes of discussion and cooperation.

Next meeting to be held in same place on Monday, May 28, at 5 p. m.

Meeting adjourned.

OBITUARY.

J. C. Hearne, A. M., M. D.

Joseph Carter Hearne, A. M., M. D. Born Versailles, Ky. Graduated State University at Columbia, Mo., receiving A. M. degree with high honors, 1870. Jefferson Medical College, Philadelphia, Pa., 1872. Office Student Prof. S. D. Gross, 1871-1872. Second assistant in clinics under Prof. Gross and Prof. Joseph Pancoast, 1871-1872. Resident physician Philadelphia Hospital (Old Blockley) for three years. Chief surgeon Hannibal & St. Joseph Railway, 1881-1891. Secretary Missouri State Board of Health, 1883. One of the founders of Wabash Association Railroad Surgeons, it being the first association of railroad surgeons organized in the world, out of which grew the National Association of Railroad Surgeons in 1890 at Buffalo, N. Y., of which he was vice-president. District Surgeon Santa Fe Railroad Company since 1892. Member National and Pacific Association of Railway Surgeons. Member American Medical and Public Health Associations. Member of Medical Society of the State of California. Member of San Diego County Medical Society. Ex-president and ex-vice-president San Diego County Medical Society. Organized, owned and managed Hearne Surgical Hospital and Hearne Training School for Nurses in 1906. Chief surgeon of various corporations and railways of San Diego, Cal.

Died at his home, San Diego, Cal., May 9, 1917, aged 66.

Society Reports

CONTRA COSTA COUNTY.

The Contra Costa County Medical Society met in regular monthly meeting at the residence of Dr. C. R. Blake, Saturday night, May 26, which was the best attended meeting we have ever had, and the following program was listened to with unusal interest.

Dr. Leo Leonidas Stanley, Surgeon for San Quentin Prison, Cal., read a most interesting paper on Spinal Anaesthesia, which was discussed by the members present and also by Dr. Thomas W. Huntington. Dr. Stanley had used Spinal Anaesthesia in 500 consecutive cases without any untoward symptoms or bad results.

Dr. Thomas W. Huntington of San Francisco talked to us on the subject of Psychology, as pertaining to the present world crisis. He gave us very valuable information regarding the duties, responsibilities and opportunities in the present war.

At the conclusion Mrs. C. R. Blake served an elaborate banquet, for which she was given a hearty vote of thanks. Those present were:

Drs. Carter, H. N. Belgum, M. Deininger-Keser, P. C. Campbell, W. W. Frazer, H. L. Carpenter, Hall Vestal, J. T. Brenceman, Wm. Lucas, C. R. Blake, W. E. Cunningham, C. E. Camp, U. S. Abbott, Richmond; E. E. Johnson and F. F. Neff, Concord; J. H. Adams, Crockett; E. B. Fitzpatrick and J. L. Beard, Martinez; S. H. Marks, Pittsburg; C. R. Leech, Walnut Creek; J. W. Hammond, Byron; F. S. Cook, Brentwood; A. L. Morrill, Antioch; A. B. Diepenbrock, from the local camp of the United States army; L. L. Stanley, San Quentin; T. W. Huntington, San Francisco.

Drs. J. H. Adams of Crockett and A. L. Morrill of Antioch were received as members into the Society.

Dr. J. L. Beard of Martinez, formerly of Sierra County, and Dr. S. H. Marks of Pittsburg, formerly of Marion County, asked to be transferred to the Contra Costa County Medical Society.

U. S. ABBOTT, Secretary.

KERN COUNTY MEDICAL SOCIETY.

The Kern County Medical Society met at the office of the City Health Officer on Friday, June 15, at 8:45 p. m., President F. J. Gundry in the chair.

It was regretted that Dr. Bunnell of San Francisco missed his train and was not able to be with us for the meeting of May 18, but we hope to have him meet with us later in the year.

We had with us as a guest, Dr. A. R. Moodie of Fellows, who made application for membership by transfer from San Mateo County, of which Society he was formerly Secretary, residing at Redwood City during his secretaryship.

Many communications were read and disposed of, among them Coverage, Medical Defense and Administration Regulations and Rules.

It was noted that Dr. E. A. D. Jones had established himself at Taft, and had been appointed City Health Officer; also, that Dr. Wm. B. Smith has hung out his shingle at Kernville.

Moved by A. I. Fraser, seconded by Earl Brown, that meeting adjourn until meeting of September 21, 1917, at 8:30 p. m.

C. A. MORRIS, Secretary.

MENDOCINO COUNTY.

At the call of the president, Dr. Frank C. Piersol, a meeting was held at Ukiah on the 5th. This meeting was the most important since the reorganizing meeting on February 22, 1906. Drs. F. G. Gunn, Willets. Melvin John Rowe and Talmage, were elected to membership. Hereafter

meetings will be held every month and are to alternate between the coast and the valleys.

Present: Drs. F. C. Piersol, H. H. Wolfe, F. G. Gunn, S. L. Rea, L. C. Gregory, Geo. W. Stout and O. H. Beckman, members, and Dr. A. J. Atkins, San Francisco, visitor.

Dr. S. L. Rea, chairman, organized the Auxiliary Medical Defense Committee of Mendocino County, California.

The state chairman and others were expected.

The magnificent banquet provided by the Ukiah fraternity started the proceedings. The partakers feel duly grateful. All the fraternity is tabled and I suppose fully prepared to back Uncle Sam to the limit.

The first regular monthly meeting was held at Greenwood (Elk) on Saturday, June the 9th, in the office of Dr. Carol L. Sweet at 8 p. m.

Members present: Drs. H. Peddicord, C. L. Sweet, H. O. Cleland, A. Huntley, L. C. Gregory and O. H. Beckman. The president, Dr. Frank C. Peirsol, not being present our host, Dr. Carol Lincoln Sweet, occupied the chair.

1. Minutes of last meeting approved.
2. No unfinished business acted upon.
3. A letter read from the State Secretary, in Re to Indemnity Fund and Medical Defense Rules, with enclosures.
   (a) "Coverage Rules." Inspected.
   (b) "Administration Regulations." Inspected.
   (c) Defense Rules read and discussed.
4. Next a motion was carried to disregard all back dues prior to 1917.
5. A circular letter from the State Secretary, dated May 24th:

To All Industrial Accident Insurance Companies:

Gentlemen:

The following Resolution was adopted by the House of Delegates at the recent meeting of the Medical Society of the State of California, held at Coronado, California, April 17th, 1917:

"Whereas, Certain Insurance Companies have employed physicians on a salary basis, to care for as much of their surgical work as possible, at a price inadequate to cover reasonable fees for labor performed, and

"Whereas, It was the distinct understanding between the Industrial Accident Commission, the State Fund and the Adjusters' Association and the Medical Society of the State of California, that such practice would not be adopted; be it

"Resolved, That the Industrial Accident Commission, the State Compensation Fund and the Adjusters' Association be reminded of this agreement and requested to desist from this practice, and that such members participating in such a contract be disciplined by their County Society, and that the names of the Insurance Companies, which are parties to such a contract, be made known to the members of this Society by its officers. It was further

"Resolved, That the Secretary be instructed to send a copy of this resolution to all Industrial Insurance Companies."

OSWALD H. BECKMAN, Secretary.

PROCEEDINGS OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

During the months of April and May, 1917, the following meetings were held:

Tuesday, April 3—Section on Medicine.

1. Cutaneous Metastases in Lymphosarcoma: Demonstration of Patient. Harry E. Alderson.
2. Some Observations on the Phenolsulphophthalein Test; Its Value as an Aid in Classifying Kidney Lesions. R. B. Tupper.
3. Lymphocytosis: A Clinical Study. J. Marion Read.
4. Complement Fixation in Tuberculosis. B. Jablons.

Tuesday, April 10—General Meeting.

(This meeting was held at the San Francisco Commercial Club, following a dinner given to Dr. Robert C. Coffey of Portland, Oregon, and Dr. Hugh P. Greeley of Waukesha, Wisconsin.)

1. Gastric and Duodenal Ulcers. Robert C. Coffey.
2. Diabetes Mellitus: Broader Aspects of Treatment and End Results. Hugh P. Greeley.

Tuesday, May 8—General Meeting.

1. The Isolation, Properties and Actions of Tethelin, the Active Constituent of the Anterior Lobe of the Pituitary Body. T. Brailsford Robertson, Berkeley.
2. Observations on Recent Cases of Variola. A. A. O'Neill.

Tuesday, May 15—Section on Surgery.

1. Intranasal Plastics (Illustrated by lantern slides). Grant Selfridge.
2. Intra-abdominal Hemorrhage Other than from Ectopic Pregnancy; Report of Cases. L. H. Hoffman.
3. Some Remote Effects of Brain Injury. Harold W. Wright.

Tuesday, May 22—Section on Eye, Ear, Nose and Throat.

Conditions in Rumania and Russia. Professor Doctor Stanculeanu, University of Bucharest.

Tuesday, May 29—Section on Urology.

1. Infections of the Upper Urinary Tract in Women. William E. Stevens.
2. Irritability of the Female Bladder Due to Prolapse of the Posterior Wall of the Urethra. (Illustrated by lantern slides.) Dr. L. C. Jacobs.
3. An Interesting Case of Pyuria. (Illustrated by X-rays.) G. W. Hartman.

No meetings will be held during June and July.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the rooms of the Chamber of Commerce on Friday evening, May 25. The meeting was called to order by First Vice-President McGurk and those present were: Drs. E. B. Todd, N. E. Williamson, R. B. Knight, Margaret Smyth, F. Conzelmann, J. D. Dameron, B. F. Walker, F. P. Clark, S. E. Latta, Mary Taylor, W. F. Priestly, H. Smythe, C. F. English, R. T. McGurk and D. R. Powell with Dr. McCloskey of Stockton, Dr. E. W. Cleary of San Francisco and Dr. Henry Smith Williams of New York City as guests.

Following a short business session, the chairman introduced Dr. Henry Smith Williams who told of the experiences in the Beebe-Williams clinics in New York with non-specific vegetable protein compounds called Proteals. According to clinical case reports, excellent results have been obtained in the treatment of carcinoma, tuberculosis, arthritis and other conditions. Following his paper, there was quite a lively discussion and the doctor answered numerous questions.

The chairman called the members' attention to the great loss which the society had suffered in the death of one of its oldest and most respected and highly esteemed members, Dr. J. D. Young. After accepting the invitation of the Lodi physicians to hold the June meeting of the society in Lodi, it was moved and carried that the society adjourn in respect to the memory of Dr. J. D. Young.

DEWEY R. POWELL, Secretary.

SANTA BARBARA COUNTY.

The regular monthly meeting of the Santa Barbara County Medical Society was this month a joint meeting with Ventura County. The meeting

was well attended by both units and thoroughly enjoyed by all.

The meeting was held at the Arlington Hotel, Monday evening, May 14, 1917. After a banquet the guest of honor, Dr. Dudley Fulton of Los Angeles, delivered a paper before the society on "Diagnosis and Treatment of Renal Insufficiency." All members present took part in the discussion, and the meeting and paper were pronounced the best of the year.

R. M. CLARKE, Secretary.

TULARE COUNTY.

At the regular monthly meeting of the Tulare County Medical Society held in Visalia on June 3 Dr. Thomas W. Huntington of San Francisco addressed the Society on "The Psychology of War." The address was of great interest and a large attendance was present.

The following were named as "The Auxiliary Defense Committee of Tulare County, California" and as the "Committee on Aid to Military Colleagues": Dr. C. A. Tillotson, Dinuba; Dr. J. Tracy Melvin, Porterville; Dr. A. W. Preston, Visalia.

The Society extended a very sincere vote of thanks to Dr. Huntington for his visit and address and voted to enroll in a body in the Medical Reserve Corps.

ADDISON W. PRESTON, Secretary.

REPORT OF THE TREASURER OF THE COMMITTEE OF AMERICAN PHYSICIANS FOR AID OF THE BELGIAN PROFESSION FOR THE QUARTER ENDING MAY 31, 1917.

No contributions.

Previously reported receipts	$7,961.26	
Total Receipts		$7,961.26
Previously reported disbursements:		
1625 Standard boxes of food @ $2.20	$3,575.00	
1274 Standard boxes of food @ $2.30	2,930.20	
353 Standard boxes of food @ $2.28	804.84	
Total Disbursements		$7,310.04
Balance		$651.22

F. F. SIMPSON, M. D., Treasurer,
7048 Jenkins Arcade Building,
Pittsburgh, Pa.

Book Reviews

Diseases of the Stomach, Intestines and Pancreas. By Robert Coleman Kemp, M. D., Professor of Gastro-intestinal Diseases at the Fordham University Medical School. Third edition, revised and enlarged. Octavo of 1096 pages, with 438 illustrations. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, $7.00 net; Half Morocco, $8.50 net.

In order that an adequate review of this encyclopedic work can be written, more space than can be afforded in these days of the high cost of paper would be required. In the field indicated by the title, a most complete and painstaking text-book has been assembled, making use of the whole literature, American and foreign.

This third, revised edition is a well merited proof of the wide popularity of Kemp's success in placing before the medical world a book that so thoroughly fills its place; this being the seventh reprint of the work in its original and revised forms.

Among the sections that have been added to the work or amplified, are radio-diagnosis, Lane's kinks, Jackson's membrane, duodenal dilatation, ileo-cecal valve incompetency, subinfection, protein absorption, focal infection, as a source of gastro-intestinal disease and colon infection in other than the gastro-intestinal tract, visceral displacements, and diverticulitis. In addition the author has come out with decisive statements on the futility of treating surgical conditions except by the earliest possible application of surgery, including early exploratory operation in suspected malignancy and early excision of gastric ulcer regarded as a precancerous condition.

Among the standard reference works that grace the doctor's book shelves, a place should surely be found for Kemp's most helpful and well balanced text-book. G. H. T.

The Starvation Treatment of Diabetes with a series of graduated diets. By L. W. Hill and R. S. Eckman. With an introduction by R. C. Cabot. Third edition. Boston: W. M. Leonard, Publisher. 1917. Price $1.25.

This, the third edition in two years, is a strong testimonial of this little book's popularity. Quite a little new matter has been added and some of the diet tables have been changed, particularly along the lines of reduction of fat. This work can be highly recommended to all physicians interested in the treatment of diabetes and to the diabetic patient of average intelligence because of its practical teachings and ease of application.

R. B.

A Practical Treatise on Fractures and Dislocations. By Lewis A. Stimson. Eighth edition, revised and enlarged with 475 illustrations and 39 plates in monotint. New York and Philadelphia: Lea & Febiger. 1917. Price, $6.00.

It is a pleasure to greet this old friend and standby in a new edition. We know of no book on fractures that can compare with it for completeness and careful elaboration; it has due regard for the new, but does not neglect the valuable data contained in the works of older writers. Stimson has brought it up like a favorite child; each successive edition shows the effects of his work and thought and nursing.

The new eighth edition contains considerable material on gunshot wounds, gathered in French military hospitals, and additions to the chapter on dislocations of the shoulder in infancy.

In his preface the author says: "I hope that the book in its formulation of principles and indication of choice of methods will be a safe guide for the practitioner and student." It is. L. E.

Surgical Clinics of Chicago. April, 1917. Volume I, Number 2. With 99 illustrations. Published bi-monthly by W. B. Saunders Company, Philadelphia and London. Price per year, $10.00.

Contents.

Clinic of Dr. A. J. Ochsner:
- Carcinoma of the breast. Intra-abdominal strangulated inguinal hernia.

Clinic of Dr. N. M. Percy:
- Pernicious anemia; splenectomy; blood transfusion.

Clinic of Dr. John Ridlon:
- Congenital dislocation of the hip.

Clinic of Dr. A. D. Bevan:
- Surgical lesions of the colon.

Clinic of Dr. E. W. Andrews:
- Divided bloodvessels as aids to accurate wound closure.

Clinic of Dr. A. E. Halstead:
- Three cases illustrating points in the surgical pathology of the region of the embryonic branchial clefts. (1) Ranula ; (2) Cyst of the

ductus thyroglossus; (3) Retromaxillary tumor probably of branchial origin.
Clinic of Dr. Malcolm L. Harris:
Laryngectomy under nerve blocking.
Clinic of Dr. Carl Beck:
Plastic operations on the upper extremity.
Clinic of Dr. A. B. Kanavel:
Bullets located between the atlas and the base of the skull; technic of removal through mouth.
Clinic of Dr. D. N. Eisendrath:
Inguinosuperficial hernia associated with nondescent of the testis.
Clinic of Dr. C. B. Davis:
Suppurative pericarditis.
Clinic of Dr. D. B. Phemister:
Chronic lung abscess with pulmonary hypertrophic osteo-arthropathy.
Clinic of Dr. Louis A. Greensfelder:
Demonstration and reduction of an old subcoracoid dislocation of the shoulder.
Clinic of Dr. Hugh McKenna:
Demonstration of cases illustrating important aspects of the indications, technic and results of bone transplantation and arthroplasty. (1) Double hallux valgus. (2) Fracture of the femur treated by means of an autotransplant. (3) Tuberculosis of the first phalanx of the second finger. (Demonstration of previously operated cases.)
Clinic of Dr. F. G. Dyas:
Open treatment of infected wounds.

Traumatic Surgery. By John J. Moorhead, M. D., F. A. C. S., Adjunct Professor of Surgery in the New York Post-Graduate School and Hospital. Octavo volume of 760 pages with 522 original illustrations. Philadelphia and London: W. B. Saunders Company. 1917. Cloth, $6.50 net; Half Morocco, $8.00 net.

The author is chief surgeon to the Interborough Rapid Transit and New York Railways; his book is evidence enough of his experience. The book is eminently practical; symptomatology and treatment are well discussed, briefly, clearly and with a foundation of personal observation.

The chapters on fractures and dislocations will be especially valuable to those engaged in industrial accident work, particularly the notes on results, length of disability and first aid treatment. A few remarks on late complications might be added with benefit. The periods of partial and total disability given by the author are short, a good deal shorter than they would be in the hands of a general practitioner, and even of a trained surgeon, unless he has to do with an uncommonly willing and energetic class of insurance patients. Some observations are at variance with the experience of others: e. g., that fibrous union is frequent in fractures of the clavicle, and that non-union in fractures of the forearm is unusual; that fractures of the costal cartilages are rare, and that restoration after dislocation of the elbow is complete.

The chapter on injuries of the spine contains a complete discussion of cord complications, but we would appreciate a little more information on the subject of sprained back, sacralized lumbar vertebra and similar obscure conditions. The author's attitude towards cord injuries is more hopeful than that of most men. Fig. 462 is misdrawn; it represents an intradural hemorrhage, but not a hematomyelia.

The chapters on trauma and miscarriage, trauma and hernia and uterine prolapse and the chapter on traumatic neuroses will be welcome to many a doctor who is put face to face with these questions in his insurance practice.

The book can be warmly recommended as a competent and helpful guide to traumatic and insurance surgery. Its rapid reprinting attests its certain popularity. L. E.

Localisation et Extraction des Projectiles. By L. Ombredanne and R. Ledoux-Lebard. Paper. Pp. 350. xiv, illustrated. Paris: Masson & Cie 1917.

This little volume is one of a collection of monographs on military medicine. It contains four introductory chapters on the Roentgen ray in general, and follows these by eleven others that treat of the search and localization of projectiles and of their extraction. It is written in a clear and practical way, and explains the by no means simple radiographic methods that have arisen from McKenzie Davidson's procedure, giving enough of their mathematical theory to make them fully intelligible. Fluoroscopic methods, which have proven of more practical value than the radiographic ones, are also fully explained and illustrated. The book will be a useful aid to radiographers and military surgeons. L. E.

Constipation, Obstipation and Intestinal Stasis. By Samuel Goodwin Gant, M. D., LL. D., Professor of Diseases of the Colon, Sigmoid Flexure, Rectum and Anus in the New York Post-Graduate Medical School and Hospital. Second edition enlarged. Octavo of 584 pages, with 258 illustrations. Philadelphia and London: W. B. Saunders Company. 1916. Cloth, $6.00 net; Half Morocco, $7.50 net.

This book contains a great deal of information upon the subject, and undoubtedly has been of service to the medical profession or it would not have been reprinted twice and now re-edited. There are a number of objections, however, which seem to be common to the average text-book and which ought not to be passed over silently in a review. Probably the worst fault of text-book writers is the tendency to make loose and unwarranted statements. For instance, on page 71, what experimental evidence has Dr. Gant for the statement that the daily use of cleansing enemas is very injurious, "owing to the fact that it leads to enteroptosis, angulation, dilatation, atony of the gut and an obtunded condition of the colon"? Similar statements are made on page 209. We doubt if he would defend such a statement if it were called to his attention. He doesn't object, however, to the doctor's giving the irrigations at so much per visit. On page 267 and elsewhere he talks of "torpidity" of the liver, whatever that is. He thinks it can be corrected by vibratory massage over the liver. He shares also in the common delusion that mercury is a chologogue (p. 306). In speaking of massage, on page 271 he says: "It dislodges and pushes down scybala and large putty-like fecal accumulations lodged in any part of the colon. . . . it assists in driving the contents of the small bowel into the cecum . . . and helps to force solid feces out of the sigmoid flexure. It breaks up fecal masses and assists them to pass points of obstruction." Dr. Gant may have proof for these statements, but we doubt it very much. While studying people under the radioscope, we have tried repeatedly to move fecal masses a little way along the colon, and have always failed. If this is true for a thin patient with the colon visible under our hands, what chance has the masseur, rubbing where he thinks the colon should lie? Anyone who will kill and open a rabbit and try to move the scybala along the colon will be surprised to see how difficult it is, on account of the firm grasp of the bowel wall. Although bowel movements may be obtained after massage, our experience with the X-ray makes us feel sure that it is not due to any direct forwarding of the intestinal contents.

On page 230 and elsewhere he describes high and low enemas, although on page 239 he admits that the successful introduction of the long colonic tube under all circumstances requires a great deal of skill and ingenuity. He describes how it can be done, but we are quite sure that he would have

omitted this section of his book if he had ever checked up his efforts in this direction with the X-ray. Anyone who has passed a sigmoidoscope knows how impossible it would be to pass a soft tube into the sigmoid. We should expect a rectal specialist to be one of the first to point out the uselessness of this distinction between high and low enemas. If he has watched any barium enemas being given he must know that they flow on into the cecum when the nozzle is inserted just beyond the anal sphincter.

Dr. Gant inclines to the mechanical theories of stasis. For instance, on page 95, he states his belief that the normal flexures of the colon serve to retain the feces in different segments. Naturally he marvels (p. 97) that with all the anatomic obstructions to the free passage of feces in the colon, sigmoid and rectum, one can still have unaided evacuations. In common with other writers, he seems to forget that there is such a thing as a colonic musculature. Figures 200 and 256 depict as serious operable kinks what we believe most radiologists would call a normal, harmless variation of the colon. The author holds these bends responsible for the constipation, and yet, in Figure 216, we see him making a worse kink, and a mess of adhesions in order to anchor a dropped sigmoid flexure.

He is too much impressed with the seriousness of enteroptosis. He thinks these patients always suffer from constipation, extreme nervousness, frontal headaches, loss of appetite, malnutrition, emaciation, anemia, tympanites, disturbed circulation, etc. (p. 184). He plainly has not been following recent work, which has shown that enteroptosis is more or less marked in a large proportion of women, sixty per cent. of whom may have no symptoms from it.

There is a great deal on constipation, some of which is good and shows evidence of the author's observation of his own patients. Other parts are unsound, show a lack of thought and a servile following of other writers on the subject. For instance, on page 129, he says: "No one has yet been able to give a satisfactory explanation of why it is that one constipated individual will suffer from most distressing symptoms . . . because of retained feces . . . while another person suffers no inconvenience and appears to be pretty well, although he has not had an evacuation for several days, weeks or months." He thinks it may be due to an idiosyncrasy of the patient—that the costiveness is only one factor, the other being the individual's constitution and **especially the irritability of his nervous system.** He has seen cases in which retention of feces for from six weeks to four months caused but slight disturbance in the patient. On page 133 he says: "Unfortunately, many individuals in some unaccountable way convince themselves that their health and happiness is dependent entirely upon a daily evacuation, which, according to their standard, should take place at a set time and which should not vary either in amount, consistence or shape. Such persons, especially when they are of a nervous temperament, immediately begin to worry if the daily evacuation is delayed, or is smaller, or is harder than they think it should be; and on the other hand they are as happy as a child with a new toy when the stools come in the regular way and are of the proper proportions. Persons of wealth and leisure who are constipated, develop nervous phenomena more frequently than working people similarly afflicted, simply because they have an abundance of time to dwell upon their real or supposed ills. I have frequently treated highly educated and refined persons of both sexes, who, when they did not have their morning evacuation would worry until they were all in a tremble and totally unfit to keep their business or social engagements."

After giving this splendid description of the typical neurotic constipated individual, he relates some experiences to demonstrate the pronounced psychological factor which is so often present. He tells (p. 212) of the wonders "accomplished in the treatment of constipation by encouraging words, congratulating the patient from day to day upon his improved looks and by suggesting that if he will do this and that, improvement will be still more rapid." "I have on many occasions administered colored water, bread pills or other non-laxative agents to patients suffering from constipation, at the same time conveying to them the idea that these were reliable cathartics which would bring about an evacuation next morning; many times my prophecy came true. Often I have administered to patients who had not had a movement in twenty-four hours, a very light electric, mechanical, vibratory or massage treatment, which could not possibly excite peristaltic action, and have coupled this with the suggestion that if they would immediately rise from the table and go to the toilet before the effects of the application worked off, they would have an evacuation, and not infrequently they were successful."

After this clear recognition of the psychologic nature of constipation, it is surprising and disappointing later to find him apparently joining with his patients in their fears, in their centering of attention on their colons, and in their dread of the awful consequences of auto-intoxication. In one place he is apparently hesitating a bit whether to accept the experience of his own clientele or the writings of Lane and his school. He says (p. 133) auto-intoxication is a frequent manifestation of chronic constipation "if the reported experiences of many clinicians **are to be relied upon.**" (Black ours.) On page 563 he has apparently forgotten this reserve, for we find him listing pyorrhoea, endocarditis, gout, loss of hair, endometritis, thyroid disease, duodenal ulcer, visceroptosis and even syphilis as complications and end results of stasis.

In spite of his experience with bread pills, he describes and warmly endorses a number of therapeutic measures which it has always seemed to us can only be vehicles for psychotherapy. On the whole he seems to think they really work, although on page 213 he expresses some doubt. He says: "If the patient has an exaggerated idea of the curative powers of electricity, mechanical vibration, massage, or water drinking, give it to him and permit him to believe that it will benefit him greatly, but at the same time combine this with other therapeutic measures which are more effective while not so important in the eyes of the patient." He advises the physician to fit up his office with a complete electrical outfit, massage rollers and balls, vibratory and suction pumps, therapeutic lamps, irrigators, etc., to carry out treatment on the constipated. We believe this is dangerous advice to the young doctor. At first he may realize that this is mainly psychotherapy, that it is a harmless way of keeping the patient busy, etc., but later he is likely to come under the spell of his own buncombe. It is so easy that he is soon using it on everyone, and before long he doesn't even attempt to make a diagnosis. To be sure, the neurotic constipated love this sort of thing. They will swear by the physician who can find most kinks in their bowels, who will share with them their fears of auto-intoxication and who will devise the strangest schemes for purgation. It would seem to us, however, that such service to the patient is not for his greatest good; it is neither kind nor fair. Permanent and true cures can only be wrought by training the constipated (if possible) to look upon his colonic functions as sensibly and as unconcernedly as does the average sane man.

We are glad to see he recognizes the serious results which often follow the prescription of a

rough dict. On page 214, he says the change should be gradual in order to avoid attacks of indigestion, colic and flatulence. We believe even such precautions will rarely be of avail. He is one of the few writers whom we have found who realizes that in many instances the benefits derived from rough diet **"are offset by the gastro-intestinal disturbances which follow in their wake."** (Black ours.) As usual with writers on constipation, he doesn't explain why they give an irritant rough dict in spastic constipation. On page 335 he says: "Every means should be taken to prevent and relieve muscular contractions of the bowel" in the spastic type; the treatment should be radically different from that in atonic constipation. One would think that if this difference is so important, one of the best chapters in the book should be on the differential diagnosis between the two types. So far we have been unable to find anything on the subject. The author seems to be following a meaningless classification as servilely and as thoughtlessly as he accepts von Noorden's rough diet for constipation with mucous colitis, although Gant says (p. 218) that this is always of the spastic type. Consistency is a virtue practically unknown amongst writers on constipation.

He complains (p. 462) that enteroptosis is sometimes difficult to remove—apparently not recognizing that it is often as fixed as the shape of the patient's head or foot. Although, on page 471, he admits that all the enteroptotic's symptoms may disappear under forced feeding and rest, in other chapters he describes a number of operations for anchoring the organs and gives the impression that they ought to be used much more than they are (p. 476). Surgeons have a pernicious habit of writing up their favorite gastro-, colo-, nephro- and ceco-pexies in glowing terms, making the reader feel that it is a crime not to use them; and then, in an inconspicuous postscript, adding that such operations are to be reserved until everything else has failed; that they are applicable to but a few unusual cases and that although the organ may stay put, the symptoms generally return after a few months. We believe that anyone reading Gant's book would feel that he ought to send for his old patients to have their abdomens remodeled. If he is fortunate enough, however, to turn to the last page of the book, he will find the following afterthought: **"The author would urge surgical intervention as a last resort in cases of constipation . . . with intestinal auto-intoxication, and not simply because a radiograph seems to show a mechanical intestinal defect."** (Black ours.) "Largely through the teachings of Lane, many American surgeons are resorting to surgery much more frequently than is necessary and are performing dangerous operations that often leave serious permanent sequelae (without benefiting their patients), for unimportant obstructing lesions causing stasis that can be relieved by the less serious and more conservative procedures elsewhere described. The author believes **less colon snatching** and **short-circuiting** should be done because the **former** often ends fatally and the **latter** frequently leaves the patient in a worse condition than before the operation." We rejoice to read these things, but they should have been set before the reader at the beginning of every chapter on operative procedures.

Our criticism, then, is that although the book may be very useful in describing every conceivable procedure directed against constipation, many chapters show so little evidence of clinical experience that one would think they were written by a compiler. W. C. A.

STATE BOARD OF HEALTH, JUNE MEETING.

At the meeting of the State Board of Health in Sacramento on June 2, 1917, the following members were present: Drs. George E. Ebright, President; Fred F. Gundrum, Vice-President; Edward F. Glaser, Adelaide Brown, Robert A. Peers, and Wilbur A. Sawyer, Secretary.

Five inspectors employed by the Supervisors of Siskiyou County in enforcing the State rabies quarantine were deputized as inspectors of the State Board of Health without salary.

Certificates as Registered Nurses were granted to 174 nurses who had passed the examination held by the Bureau of Registration of Nurses on April 18 to 19. Thirty-eight candidates had failed to receive the required grade. Two nurses were given certificates through reciprocity.

A permit was given to the Manor Water Company to supply water to Fairfax Manor, and a temporary permit was given to the Lake Hemet Water Company to furnish water to Hemet. Sewage disposal permits were granted to the Moraga Water Company at Moraga, and to the Folsom Sanitary District at Folsom.

The following resolution was adopted:

"Resolved, That sacks which have been used for the collection of soiled laundry shall not be used for the delivery of clean laundry unless such sacks have been thoroughly washed before the clean clothes have been placed therein."

Dr. Frank L. Kelley was promoted from the position of Assistant Epidemiologist to that of Epidemiologist.

The resignation of Dr. James G. Cumming, Director of the Bureau of Communicable Diseases, was accepted with the proviso that it take effect on August 1, as requested by Dr. Cumming, and the following resolution was adopted:

"Resolved, That the California State Board of Health accepts with regret the resignation of Dr. James G. Cumming as Director of the Bureau of Communicable Diseases in order that Dr. Cumming may take up his duties as Captain in the Medical Reserve Corps of the United States Army; and in accepting the resignation of Dr. Cumming the Board wishes to express its gratification over the increase in the work done by the Bureau while under Dr. Cumming's administration and over the efficiency with which that work was done."

It was decided that the vacancy created by the resignation of Dr. Cumming and also six new positions as State District Health Officer be filled through Civil Service, the examinations to be held on June 30 throughout the United States by the United States Public Health Service, acting for the State Civil Service Commission. Examinations for the positions of Epidemiologist in the Bureau of Communicable Diseases and Bacteriologist of the Southern Division Laboratory of the same Bureau are to be held by the Civil Service Commission throughout California on the same date.

On the recommendation of the Director of the Bureau of Tuberculosis the Marin County Tuberculosis Hospital was declared eligible for the State tuberculosis subsidy.

The Secretary was instructed to arrange, if possible, through the State Bureau of Registration under the Draft Act, for the reporting of all cases of tuberculosis discovered during the physical examinations, and for the subsequent examination, when desired, of the tuberculosis patients by experts, and their proper supervision and care as far as possible; and also for the reporting and, if requested, the correction of correctable defects in men who would otherwise be acceptable in the army.

A motion was carried that the Board recommend to the proper State authorities the setting aside from the emergency defense fund, or such other moneys as may be available, the sum of one hundred thousand dollars for the establishment and maintenance by the State Board of Health, at suitable locations selected by the Board, of a

convalescent camp or camps for tuberculous persons rejected at time of enlistment or returned from the army.

Mr. Kemper B. Campbell, Attorney to the Board, announced that a decision favorable to the contentions of the Board had been handed down by the Second Appellate Court in the case of Boss vs. Lewis. This decision upheld the right of the State to compel the counties to pay the fees of local registrars of vital statistics.

The action of the Secretary in assigning the enforcement of the new plumbers' registration act to the Bureau of Sanitary Engineering was approved.

The Board approved the formation of a Division of Biology in the Bureau of Communicable Diseases which would be under the supervision of Professor Charles Kofoid of the University of California. Prof. Kofoid and Assistant Professor W. W. Cort were appointed Biologist and Associate Biologist without salary from the State Board of Health. The purpose of the new Division is to do protozoological and helminthological work for the State Board of Health in connection with war sanitation and to make investigations of flukes, worms, protozoa, and other human parasites, particularly intestinal parasites, throughout California.

The Board considered the salaries of the staff and made a number of changes, which will be effective July 1, 1917, and transacted other routine business.

As usual a large number of alleged violators of the pure foods and drugs acts were given hearings and action was taken by the Board in each case.

WILBUR A. SAWYER, Secretary.

THE STATE BOARD OF HEALTH MAY MEETING.

The State Board of Health held its regular monthly meeting in Sacramento on May 5, 1917. The following members were present: Drs. George E. Ebright, president; Fred F. Gundrum, Edward F. Glaser, Adelaide Brown and Robert A. Peers.

Consideration was given to the case of typhoid carrier near Bakersfield, who had been found, by investigation of the Bureau of Communicable Diseases, to be responsible for twelve cases of milk-borne typhoid fever in the previous twelve months. A resolution was passed forbidding the sale of milk until the carrier had been removed from the dairy.

The Board instructed its attorney to institute the proper legal proceedings to compel the supervisors of San Luis Obispo County to appoint a county health officer as required by law.

A physician was given a hearing who had failed to report a case of diphtheria and had allowed the patient to travel to another city. He plead ignorance of the true nature of the disease. A warning was given and action was deferred.

The Director of the Bureau of Tuberculosis was instructed to request the federal authorities to notify the proper local authorities of the names and addresses of all applicants for military service rejected on account of tuberculosis.

The following resolution was adopted and ordered sent to the mayors of all incorporated cities in California:

"Whereas, Every possible protection to health and physical welfare should be afforded those enlisting in the Federal service and the citizens of the state at large; and

"Whereas, Experience shows that unless restrained by public authority prostitutes gather in large numbers near army camps and spread venereal diseases among the soldiers; and

"Whereas, Said diseases are a serious factor in morbidity and reduced efficiency, and a menace to the public health; therefore be it

"Resolved, That the State Board of Health of California urge upon all mayors throughout the state that they demand from their health officers, police departments, and other appropriate officials an active policy of protection of the enlisted men and of the civil community against this menace to the public health; and, be it further

"Resolved, That detailed reports be requested of said officials setting forth the recommendations made by them and the methods of 'preparedness' being enforced by them to meet this public health problem."

In accordance with the recommendation of the Director of the Bureau of Sanitary Engineering the Board issued a permit to the City of Rio Vista to supply water from wells to the City of Rio Vista.

A permit was issued to the City of Paso Robles to treat its sewage in an Imhoff tank and empty the effluent on a sand bank adjacent to the Salinas river.

Two nurses were given certificates as registered nurses.

The vacancy in the position of assistant engineer in the Bureau of Sanitary Engineering was filled by the appointment of Mr. Clyde F. Smith.

Many items of routine business were transacted.

Hearings were held in cases of alleged violations of the foods and drugs laws and appropriate actions were taken.

W. A. SAWYER, Secretary.

NEW MEMBERS.

Fox, Charles Marvin, San Diego.
Smith, Virginia T., Calipatria.
Congdon, Chas. E., Jamestown.
Gould, Elisha T., Sonora.
Wrigley, Geo. C., Sonora.
Ermentrout, S. J., Elbridge.
Klick, John J., Sutter Creek.
Holliger, Charles Daniel, Stockton.
Coleman, Barney Ellerton, Mokelumne Hill.
Starbird, George A., Salinas.
Saylin, Isaac, El Monte.
Scholl, Agnes J., Los Angeles.
Donnelly, Edward F., Napa.
Ransom, Jack Kennedy, Newman.
Hill, Earl W., Eureka.
Hays, Wilfred B., Sonoma.
Mize, Guy H., San Francisco.
O'Donnell, Earl W., San Francisco.
Reid, Eugene H., Tuolumne.
Stratton, Daniel E., Chinese Camp.
Duncan, Hiram B., San Francisco.
Bullard, Margaret M., King City.
McAulay, Martin, Monterey.
Allen, R. E., Newcastle.
Bernard, Joseph H., Truckee.
Collins, W. F., Roanoke, Va.
McDaniel, John L., Los Angeles.
Nichols, R. C., Chino, Cal.
Rinkenberger, F. W. ———
Wagner, A. F., Pasadena.
Clark, Wm. S., Los Angeles.
Singleton, Wm. T., Long Beach.
Chase, Frank H., Los Angeles.
Moore, Wm. Day, San Pedro.
Fearon, Wm. M., Los Angeles.
Kalb, George B., Monrovia.
Gaylord, Chas. D., Monrovia.
Trott, Leslie D., Los Angeles.
Ross, A. B., Los Angeles.
Fish, Joseph B., Los Angeles.
Shattuck, Hobart P., Los Angeles.
Carter, C. E., Los Angeles.
McGuffin, Robert K., Imperial.
Harley, Elmer, Seeley.
Jackson, Louis H., Imperial.
Ledyard, Cory C., San Francisco.
Smith, Larz A., San Francisco.
Adams, John Henry, Crockett.

DEATHS.

Alexander, George E., Hayward.
Davis, Sylvester B., Hollywood.
Young, Junius D., Stockton.

California State Journal of Medicine.

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All Scientific Papers submitted for Publication must be Typewritten.

Notify the office promptly of any change of address, in order that mailing list and addresses in the Register may be corrected.

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THE RED CROSS.

"Decisive victories have not yet followed the flags of the central nor the allied armies, but in all, the Red Cross signalizes the most triumphant achievement of man. International laws have been torn into shreds and become mere scraps of paper, moral and religious precepts and codes have been supplanted by brutalities never practiced by primitive man, and the foundations of civilization have seemed to be on the point of disruption and final collapse, but the spirit and ideals of scientific medicine remain unsullied, and a new world in which these shall dominate, will be created." In these words Dr. Victor C. Vaughan (Graves, So. Med. Jour., 1917, X, 4) marks the present position of the Red Cross and thereby the duty which every physician owes to it.

Duty is the highest word in the physician's vocabulary. In the war which is upon us, duty demands certain definite things from every physician. Too many do not appreciate the seriousness of the times. Too many do not realize that if this war is not fought to a successful finish in Europe it will with absolute certainty be finished on American soil. Our profession has responded well to the insistent demands from home and abroad. No word of censure is intended for past performance. It is most creditable. But the future is what concerns us and not what is past. Every physician under thirty years of age or who has graduated within the last four years should have a most excellent excuse if he is not already enrolled in one of the services. It is to be hoped that no physician will be actually drafted for the new army. The medical profession is a volunteer profession. Let us live up to our standard.

So much for those who can go. A larger proportion cannot go, either because of age and health disabilities, or because of valid personal or public reasons. These have an opportunity which none should miss of enrollment with the Red Cross. Full information can be secured from the officers of the various county medical societies as to local Red Cross agencies. Suffice it here to say that the national Red Cross is under governmental supervision. The President is its head. Its accounts are audited by the War Department. Its extension and activity depend on subscriptions from members. Every community in the state should have an active Red Cross branch. Here is one opportunity for the physician, especially in suburban districts. It is in a strong sense his responsibility to see to this. Let him get in touch through his county society with Red Cross headquarters at once, and see that his community is organized. Branches are organized according to geographic location alone and each branch carries on all the varieties of Red Cross activity which are practicable or needed in its territory. Not only does each branch charge itself with increasing its membership and contributing to war and relief needs of the nation, but it is a permanent organization with authority for relief and promise of assistance and co-operation in case of any local calamity or disaster.

Under the regulations governing the American Red Cross in time of war, the various Red Cross units serving with the United States land forces become an integral part of the sanitary service of the land forces, and their members become subject to military law and discipline, and are entitled to the rights and benefits of their appropriate rank in the sanitary service. Except in great emergency, Red Cross units will not be ordered to the front but will be assigned to the zone of communications, base hospitals, home country hospitals and hospital ships. At the call of the War Department, the Red Cross furnishes organized units, sections, detachments and individuals, whose service may be required. These may be physicians, nurses, surgeons, dentists, chaplains, stenographers, pharmacists, laboratory technicians, clerks and hospital personnel.

Whenever lawful authority permits, persons absorbed by the army sanitary service from the Red Cross will be paid according to the rank held. Others known as Red Cross volunteers serve without pay but are provided with subsistence, transportation, and quarters. All are subject to army discipline and law. The Red Cross personnel is enrolled in three classes,—Class A, those willing to serve wherever needed; Class B, those willing to serve in home country only; Class C, those willing to serve at place of residence only. Those enrolled in Red Cross units designed for service in base hospitals or in the zone of communications must be in Class A.

Eleven units are organized by the Red Cross for service with the army or for training personnel. These are ambulance companies, base hospitals, hospital units, surgical sections, emer-

gency nurse detachments, sanitary training sections, information sections, refreshment units and detachments, supply depots, general hospitals, and convalescent homes. Details of these various organizations will be given later. Volunteers, both men and women, have a long list of activities from which to select their preference, for service anywhere, in the United States only, or at residence only. The work of the Red Cross is so varied that every person can find something he can do, no matter what his circumstances, and can do it with the certain knowledge that it will count. Physicians can organize, teach in Red Cross instructional courses, help administer, assist in publicity work, or engage in other available local activities, even if they can not enroll for service with the sanitary forces.

THE ALCOHOL QUESTION.

II. ALCOHOL AND THE WAR.

Several ways present themselves whereby the alcohol question assumes importance in war. Moreover these considerations have a peculiar significance in their immediate application to war conditions in the United States today. What is the direct influence of alcohol on the individual efficiency of the fighting forces? That question must be squarely answered. What are the indirect results of the use of alcohol, for instance as regards increased susceptibility to disease, and increased exposure to prostitution and venereal disease? Finally is it logical to preach food conservation and allow the present quantity of foodstuffs to be used for manufacture of alcoholic beverages? In short, is alcohol going to help materially in winning the war, or can it have any influence on the war? The former questions were in part answered editorially last month. The last question especially concerns us here.

Numerous estimations have appeared regarding the bulk of food materials used for manufacture of alcoholic drinks. A conservative and authoritative statement seems to be furnished by the War Prohibition Committee, consisting of Professors Carver, Day, Ripley and Gay of the Harvard University Department of Economics, and Dr. Irving Fisher, professor of political economy in Yale University. (Am. J. Pub. Health, 1917, June, VII, 581). This statement quotes from the report of the Commissioner of Internal Revenue for the fiscal year of 1916 (pg. 138) a total of 3,603,911,916 pounds of molasses and grain used in that year for the production of distilled liquors. This excludes wheat, barley, oats, and "other materials" aggregating 82,150 pounds. On the basis of carefully studied data, the committee estimates that for the same year 3,390,399,219 pounds of the same food materials were used for the manufacture of fermented liquors. Thus it appears that in the fiscal year of 1916 a total of 6,994,311,135 pounds of grain and molasses were used in the manufacture of fermented and distilled liquors in the United States, not to mention fruits, glucose and minor ingredients.

These figures were reviewed by a second committee composed of Professors Percy G. Stiles, Walter B. Cannon and Irving Fisher, who state that probably one-sixth of the total of seven billion pounds would be necessary for the production of denatured alcohol, and that the remaining five-sixths by conservative estimate would supply the caloric requirement for a year of seven million men.

In a letter to the New York Times (May 27, 1917), Professor Fisher emphasizes that the manufacture of these grains into alcoholic beverages results in a loss of approximately eleven million one pound loaves of bread each day, enough to furnish one pound of bread per man daily to the combined armies of England and France. He states further that this loss represents "5½ per cent. of the total food values consumed by human beings in the United States, over 10 per cent. of the total consumption of breadstuffs in the United States, 13 per cent. of the wheat consumed in the United States, and 25 per cent. of the wheat exported from the United States in 1916."

These figures are not to be held lightly. If there is occasion in fact,—and adequate surveys seem to indicate that there is,—for national control of production and distribution of food supplies to the end of averting definite food shortage for ourselves and our allies, then *pari passu* the question of manufacture of alcoholic beverages becomes of vital moment. How far such manufacture should be restricted and for what period it should be restricted can only be decided rightly by expert judgment of all the factors concerned, such as the nature and degree of food shortage, and the temporary dislocation of industry and paralysis of capital which might follow. Parenthetically it may be said that this dislocation of industry could in no wise approach that resulting from calling to the colors even the first contingent of the new army. Moreover the removal of the army drafts from industry would more than supply occupation to the group thrown out of employment by cessation of alcoholic manufactures. Nor in a generation of "war brides," war shipping opportunities and all the unusual demands added to the ordinary opportunities for capital investment, is a serious paralysis of capital to be feared.

It is a matter of pertinent interest that at its annual meeting in Cincinnati, May 9-11, 1917, the National Association for the Study and Prevention of Tuberculosis adopted the following resolution, "That this Association place itself on record as favoring national prohibition both for soldiers and civilians during the war period and for one year thereafter." With a distinguished membership and attendance drawn from the most eminent of America's physicians, the American Society for Clinical Investigation unanimously adopted the following resolution at its annual meeting at Atlantic City in May, 1917: "Resolved, that in the critical condition of the world's food supply we consider it desirable that the manufacture of alcoholic beverages and their importation into this

country be prohibited for the duration of the war and for at least one year thereafter." These resolutions are examples of many and illustrate the present trend of medical and scientific opinion based on the present conception of the action of alcohol, and of the relation of alcohol to the conduct of war.

THE MEDICAL DEFENSE RULES.

The Secretary's office has mailed to each member of the Society a printed copy of the MEDICAL DEFENSE RULES. Members have been requested to familiarize themselves with the Rules, and we wish to impress again upon the members how much it is to their interest to do so.

The compilation and restatement of our MEDICAL DEFENSE RULES and putting them in the hands of every member is one of the most important steps taken by the Council for the welfare of the entire Society. While the general tenor of some of the Rules has been known to nearly all of our members, the exact text has never been carefully and accurately stated and placed directly in the hands of each member. Heretofore, discussion has been had in sporadic cases as to the application of a given rule, which would have been avoided had members been given an opportunity to familiarize themselves with these provisions. It is earnestly suggested to our members that strict compliance with the rules will do much for the benefit of the Society; and in a particular case it may be vital to the individual's interest.

We have already taken occasion to comment in these columns upon the rule regarding election between defense by an insurance company (if a member is insured), and defense by the Society. We again repeat that this rule was adopted and has been kept in force solely because the funds are not available to afford defense by the Society in every case. Therefore, the Council felt that in requiring members to make such election the greatest good was given to the greatest number. We trust, that as our organization grows, it will be possible to revoke this rule.

We have also, from time to time, heard and participated in discussions concerning the so-called X-ray rule. Members seem to be more or less apprehensive that this rule will deprive them of defense by the Society in cases arising out of treatment of injury to bone or joint. The rule has no such effect. It expressly provides that the discretion of the Council should be exercised in every case where any reasonable grounds exist for excuse of failure to take X-ray plates. The Council uniformly exercises a sane and common sense judgment and excuses such omission. Of course, every case must depend upon itself; and a member cannot expect such favorable ruling if he recklessly and intentionally failed to exercise reasonable and ordinary precaution.

May we ask the members in considering the Rules to remember that they represent the combined judgment of men, most of whom have been at the head of the Society's affairs for many years, and who have had the benefit of all the precedence available, to-wit: eight years of experience throughout the life of our Legal Department.

MEDICAL WOMEN AND THE WAR.

Medical women have organized in various parts of the country for the purpose of offering their services to their country in the present emergency. Unfortunately no means has as yet been devised whereby the government or any of its allied bodies can take advantage of these offers, because there is no recognition of physicians of the female sex in either the Army or the Navy. This, of course, prevents the Red Cross from using these women to the full in capacities where they might excel because they are unable to join the Medical Reserve Corps of the Army or Navy. This is exactly as it was in England at the outbreak of the war three years ago. The English medical women, in spite of the inability immediately to get recognition, were able, because of the pressing need, to establish hospitals in France and so to demonstrate their ability to be of real and valuable service to the cause for which their men were giving their lives. After that they were enrolled definitely as a part of the medical staff of the army and were given the rank to which their positions entitled them.

We know of one woman (not a physician) who served in France as a Nurse's Aid with the rank of Corporal, and of another who was Matron in a base-hospital with the rank of Colonel in the British Army. We understand that the pay of these women is not quite that of men of the same rank, but cannot state this authoritatively.

We know that in this country women physicians have been asked by representatives of the Red Cross to organize groups to aid, without pay or rank, in the rehabilitation work in France. This we feel to be inconsistent. If the Government, or the Red Cross, does not wish the services of women for any particular reason, well and good, but if these services are to be used, there should be no distinction. *She* is just as much a surgeon when in the operating-room as is *he*. Why should John Smith, M. D., an anesthetist, be a Second Lieutenant, and Mary Brown, M. D., an anesthetist, be a Nurse's Aid without authority?

REGISTRATION FEES.

Every licentiate has received a slip announcing that a registration fee of two dollars per annum has been imposed upon them by the legislature at the recent session. While this is presumably a "registration fee," it is really a tax for raising funds for the prosecution of violators of the Medical Practice act. The Board of Medical Examiners have not been able, with the funds accruing from the fines of convicted miscreants, to pursue a sufficiently vigorous campaign of elimination of

quacks and others operating contrary to the law.

While the Medical Practice act is designed primarily for the protection of the public, and while any taxation for this protection should be in the nature of a public tax, we find on inquiry that it is a sound principle of jurisprudence to tax a craft whose calling requires regulation in order to carry out such regulation.

The accompanying letter from the Secretary-Treasurer of the Board of Medical Examiners will explain the machinery by which the tax is to be collected.

BOARD OF MEDICAL EXAMINERS OF THE STATE OF CALIFORNIA.

Sacramento, California, July 3, 1917.

Dear Doctor:

Replying to your recent inquiry beg to advise that among the amendments passed by the 1917 Legislature was one providing for a $2.00 registration fee payable to the Board of Medical Examiners by all holders of any form of certificate issued by this or prior boards regulating the healing art in California.

The first payment of this fee is due January 1, 1918, and subsequently on January first of each year. Failure to pay the fee within 60 days after January first of each year automatically revokes the certificate and a fee of $10.00 must be paid to the Board of Medical Examiners in order to restore such certificate as may be thus revoked.

Thirty days prior to January first of each year the Board expects to forward a notice to all certificate holders, and in order to insure delivery of such notice, the licentiates must keep the office of the Board of Medical Examiners notified of each change of address, lest the notice fail to be delivered and the payment of the fee be neglected.

The Board expects to forward a copy of the directory to be published January first of each year, to each individual licentiate who forwards his fee as above noted.

Very truly yours,

(Signed:)

CHARLES B. PINKHAM, M. D.,
Secretary-Treasurer.

EDITORIAL COMMENT.

When motoring, camping or picnicking, the first desideratum for a safe and sane outing is a safe and sane water supply. What doth it profit a man to gain the whole wide out-doors and contract a typhoid or dysentery infection? Summer typhoid is rightly named. Autumnal fever was rightly named. And the reason is well-known, when we stop to consider. If a physician is only a physician in his consulting room and professional rounds, then better for all were he not a physician at any time. He it is who must see that the picnic has safe water to drink and that the outing party does not risk its individual health on sewage which it mistakes for a beverage.

In the June bulletin of the California State Board of Health, Frank Bachmann reiterates that sparkling clear water is more apt to be a disease carrier than grossly contaminated water. All surface waters are more or less subject to dangerous infection. He states that typhoid bacilli may live thirty days in water of ordinary temperature and much longer in colder waters. Bachmann emphasizes the advantage of boiled water as the safest when boiling is practicable. When boiling is not feasible, he recommends the use of tincture of iodine, three drops to the quart of clear waters, as an efficient bactericide. If the water is cloudy or contains much sediment, six drops should be used per quart, or enough to produce a very faint brownish discoloration. After the iodine has acted for fifteen minutes, a pinch of ordinary photographic "hypo," (sodium thio-sulphate), clears the water and removes the last traces of iodine. The fifteen minute interval is important and also the brown color. In this strength there is no disadvantage from the chemicals used.

If typhoid is a sanitary crime, then is the physician an arch-criminal if he does not insure safe drinking water for outing parties with which he may be associated. With the present record of typhoid vaccination, every physician should be an example of such vaccination and should preach it to his friends and patients. Especially should he do this, since the State Board of Health will furnish the vaccine free of charge. Why not use the Board of Health more and become missionaries of the prevention of disease by such means as have here been enumerated?

As man pursues his onward and upward march, so does he tend to limit the hirsute endowment of his face, even as nature tends to limit the hairy protection of his cranium. A full beard is rare enough to excite comment and as a sanitary measure in modern camp and war conditions, the beard has had its day. Even the mustache is becoming scarce and has to answer the same indictment as its full-blown progenitor. Beards are said to serve but three functions—to heighten confidence in the masculinity of the owner, to cover a feeble chin, or to incite confidence in the beholder as to the age of the bearded. Perhaps all three motives are present to a mixed degree. Perhaps, too, there is an element of disinclination to exertion necessary to be clean shaven, or even of desire for a difference from the common fashion, which last may be after all a tenable argument. In any case, the institution of the beard seems doomed under modern battle conditions and does not bear the scrutiny of the microscope or the aseptic conscience. Down with the beard and may we as a profession be clean shaven, clean principled, and unashamed either of our chins or of our practiced ethics.

The National Committee for Mental Hygiene has created a subcommittee on furnishing hospital units for nervous and mental disorders to the United States Government, the project having been approved by Surgeon General W. C. Gorgas of the U. S. Army.

This subcommittee, of which Dr. Pearce Bailey of New York is chairman, is authorized to secure the services of alienists and neurologists to be commissioned in the Officers' Reserve Corps, Medical Section, and to serve in the neuro-psychiatric units which are to be attached to the base and other hospitals of the military services of the United States. Further information will be given, and application forms sent to physicians qualified in this branch of medicine, on application to The National Committee for Mental Hygiene, 50 Union Square, New York City.

Don't you want to help YOUR Journal? Last month only 119 sent in the Automobile Coupon. We cannot hope to get the advertisements of this trade unless you do your little share. It is your Journal and it is strictly up to you to decide whether you are sufficiently interested to aid in increasing its funds. The coupon is on page xxxiv of the back advertising section. If you did not do so, fill it out and send it. It will pay the automobile industry to advertise with us. All we have to do is to show them.

The next evil which should be attacked with the utmost vigor by all boards of health is alcoholism. Public opinion needs to be enlightened on two points with regard to the use of alcohol as a beverage.

In the first place, it should be brought home to the entire population that the habitual use of alcoholic beverages reduces, in a serious degree, the productive efficiency of the community.

In the second place, recent experiments on the effects of alcohol on the nerves and glands of the human body have demonstrated beyond a doubt that alcohol invariably does harm, and never any good either in health or disease. The use of alcohol as a defense against exposure or fatigue has been given up by all sensible persons.

The evil is rooted, first, in what are called vested interests—that is, in the investment of large amounts of capital in the plants which produce, store and distribute beers, wines and spirits; and secondly, in the methods of taxation to which the white nations are accustomed. Heretofore the medical profession and the public health officers have given an uncertain sound concerning the use of alcohol.

It remains for the boards of health to attack this hideous evil with the weapons and in the spirit of preventive medicine. They should bring to the work all recent knowledge concerning the effects of alcohol on the human body, call to their aid legislators who can find equivalents for the public revenue now derived from the manufacture and sale of alcoholic drinks, and re-enforce to the utmost the wise counsellors who by moral teachings have brought about during the past fifty years considerable improvements in regard to the use of alcohol in the more intelligent and conscientious classes.—Haven Emerson, M. D., Amer. Jour. Pub. Health, June, 1917.

Original Articles

SOME HEART PROBLEMS SUGGESTING THE NECESSITY FOR A CLOSER ALLIANCE BETWEEN THE PHYSIOLOGISTS, BIO-CHEMISTS AND CLINICIAN.*

By WM. WATT KERR, M. D., San Francisco,
Professor of Clinical Medicine University of California.

For at least five years physiologists have agreed that lack of oxygen in the *blood* is rarely a stimulant to the respiratory center, but that the very slightest increase of carbon dioxide, resulting from any increase in the body processes, at once augments the rate and depth of respiration to such an extent that the additional inspired air furnishes enough oxygen to supply the new demand. Nevertheless, the great majority of clinicians still explain the symptoms of cardiac dyspnœa, and base their treatment on the older supposition.

In the *Journal of the American Medical Association* (November 4, 1911), the writer published a paper in which attention was called to the observations of Martin Flack, as well as those of Bachman, regarding the toxic effect of lactic acid upon the heart; likewise to the researches of Ryffel and others into the sources and fate of lactic acid in the human body, and expressed the hope that the laboratory work of these different investigators would lead to a more rational and successful cardio-therapy than that at present in vogue.

As full references to the work done by these gentlemen will be found in the article above mentioned it is unnecessary to repeat them in detail. Nine years ago Flack showed that if a frog's ventricle is placed in a weak solution of lactic acid (1 in 10,000 normal saline solution) the contractions become less and less, so that finally the ventricle stops in a state of complete relaxation: and about the same time Bachman, by perfusing rabbits' hearts with solutions of lactic acid obtained increased rate with greatly diminished force of contraction and a simultaneous dilatation of the coronary arteries, a fact that would indicate lactic acid to be a paralyzing agent for all muscles of the cardio-vascular system; neither did it require a strong solution, but even amounts so small as those occasionally found in the blood of a normal rabbit had some paralyzing effect.

One of the first thoughts suggested by these experiments is an interpretation of what we call acute dilatation of the heart as it occurs during exertion, a condition that is generally described as if it were a purely mechanical effect of "heart strain." Most of us are familiar with the breakdowns that take place during or immediately after an athletic contest, and have seen them in varying degrees of severity, some when the heart recovered its normal dimensions within two or three days, and others where the change was more prolonged or even permanent. Ryffel (*Quarterly Journal of Medicine,* Vol. 3, No. 10, January, 1910), found the lactic acid in urine from competitors in a

*Read before the St. Francis Hospital Clinical Society, March 31, 1916.

twenty-four hours' track walking race in no case above 6.5 mg. per hour, but obtained relatively large quantities from that passed following violent exercise, 430 mg., subsequent to 0.36 mile, and 818 mg. after 0.6 mile, running as fast as possible round a track thirty-three laps to the mile. The lactic acid in the blood, taken from a vein in the forearm immediately after the exercise, was also increased in one case from 12.5 mg. at rest to 70.8 mg. per 100 c.c. Excess of lactic acid disappeared from the urine in about thirty minutes after stopping, but in forty-five minutes the lactic acid of the blood was not quite reduced to normal. The older observers supposed that the production of lactic acid by muscle depended on its long-continued activity, but evidently this is not the case, and the important factor is the relation between the activity of the muscles and their supply of oxygen. The increased respiration of exercise has more effect in removing carbon dioxide than lactic acid, so that in course of time the carbon dioxide pressure becomes low, whilst the acidity of the blood is still high, and the latter is only gradually diminished after the cessation of the exercise by oxidation of the lactic acid and excretion of urine containing an excess of lactic acid, this process occupying about one hour after short periods of violent activity.

Here is some laboratory work that is absolutely pregnant with matters of importance to the clinician, and yet they are practically ignored by the vast majority. Take for example its relation to the hearts of athletes. It is exceptional in the universities and public schools that the hearts of members of the various athletic teams are examined after exercise; most of them are examined before admission to the team, and if the heart appears to be normal they are told to go ahead, and no further notice is taken of them unless they complain or show marked signs of distress. Each year, generally when the excitement of the season is over, for we all know how a boy hates to be a "quitter," a number apply for treatment on account of palpitation or some other cardiac discomfort, and it takes months to get their hearts reduced to the normal area, indeed some of them never do fully recover. It is highly improbable that these changes in the myocardium are due to a *simple* strain, such as might result from lifting a heavy weight, but rather they are the outcome of repeated intoxications of the cardiac muscle with lactic acid. It is not permissible to say that because acid is quickly eliminated during the period of rest that it therefore cannot do much harm; the effects persist after the elimination of the toxin; a fire travels quickly through a forest, but it takes a long time for the trees to grow again.

These observations on the production of lactic acid and its influence on the cardio-vascular system furnish us with a definite physiological basis on which we can frame an opinion regarding the nature and amount of exercise that may be allowed to different individuals. The term "heart strain" is so very vague that there is much difficulty in estimating what it constitutes, but since we know that exertion generates a toxin which is injurious to the myocardium, and as it has been demonstrated that the amount of toxin produced varies with the demand for *rapid* oxidation rather than with the duration of the effort we are in a much better position than formerly to decide what exercises are most trying to the heart. But the distinctive idiosyncrasy of each case must always be taken into account, for we all know that the susceptibility of normal hearts to toxins varies in different individuals, the influence of tobacco being a familiar example, and consequently much of this trouble could be avoided by examining the heart immediately after exercise. Because a boy cannot stand one form of athletic exercise it does not follow that he must be excluded from all others. Personal experience with participators in college sports has led me to the conclusion that track and oarsmen suffer most, then football and tennis players, and lastly, the baseball men; of course, it must be understood that these remarks apply to men who are exerting themselves under the stimulus of competition. At one time I thought it was otherwise, and used to forbid football where I allowed the more refined and gentle sport of track work, but experience made me change my opinion, and come to the conclusion that while the footballer took bigger chances on his bones and his neck, he was not so liable to injure his heart as was the sprinter and hurdler.

These observations on lactic acid also suggested the idea that much of the suffering experienced in senile hearts, associated with varying degrees of arterio-sclerosis, might result from the presence of lactic acid in the blood. The type of case is familiar to every physician. The patient is generally over fifty-five years of age, and in the early stage does not show any signs of dropsy or oedema, but his chief complaint is rather of weakness, or easily induced fatigue; he feels slightly dyspnœic on trivial exertions, such as bending over to lace his shoes in the morning, or performing his toilet, and the trouble may increase until not only is he always conscious that his breathing is abnormal, but paroxysms of increased severity are readily induced by excitement, exertion, or a variety of other causes. Or there may be gastric distress, such as a craving sensation in the stomach, but an absolute disgust for food the moment it is placed before him. The expression is keen and alert, altogether different from the dull condition so common in cases of valvular disease where there is pulmonary congestion with oedema, bronchitis and possibly pleural effusion as a result of failed compensation. Of course the two types may co-exist, but I believe an associated arterio-sclerosis is essential to the production of the first group of symptoms.

It may be of interest to the physiologist and biochemist to follow the vagaries of a clinician's mind in his endeavor to utilize their observations in the treatment of his patients.

The plan of campaign adopted, just prior to the writing of my paper in 1911, was two-fold: (1) To neutralize existing acids in the blood; (2) to find the source and fate of lactic acid in the body,

and try to influence those in the patient so that the balance between its formation and elimination might be restored.

It is now nearly five years since this treatment was begun, but I cannot remember any case where the patient's condition seemed to be improved by the use of alkalies; indeed the only two drugs that seemed to be of any permanent value were the iodide of potash and the protoiodide of mercury, both of which belong to the alterative group. The failure of soda to furnish relief was particularly disappointing because the good results so frequently attributed to its administration in the acidosis of diabetes has encouraged the expectation that not only would it aid in transporting carbon dioxide from the tissues to the lungs, but that, by increasing the alkalinity of the blood it would remove the irritation from the respiratory centre.

In his third Herter lecture, delivered at Johns Hopkins Hospital, October, 1914 ("Lectures on the Heart," by Thomas Lewis, published by Paul B. Hueber, New York), Dr. Thomas Lewis expresses the opinion that much of the cardiac dyspnœa is due to a diminished alkalinity of the blood from the presence of lactic and other acids at present unknown. He does not make any suggestions in regard to treatment, but further states that a characteristic of the alveolar air in these cases is "high oxygen and low carbon dioxide content"; that "the blood is fully aerated and has a low tension of carbon dioxide."

My conclusions from such findings would be that the symptoms cannot be attributed to lack of oxygen or excess of carbonic acid in the blood, but that there appears to be deficient oxidation in the tissues, either because the oxygen in the blood cannot reach them, or because, on account of the absence of some enzyme or other necessary agent, the tissues cannot utilize the oxygen supplied to them.

The presence of lactic acid in the blood is an evidence of deficient oxidation. The sources of lactic acid in the human body are the metabolism of glucose in muscles during their activity, and to a lesser extent from the proteid substance, and it also arises from glucose and other carbo-hydrates during constructive metabolism. That the destruction of lactic acid in the muscles and in the body generally depends upon an adequate supply of oxygen has been shown by several observers, and, as Stoklasa discovered a ferment both in muscle and blood that converted lactic acid into alcohol and carbon dioxide, it is possible that the oxidation takes place through some such indirect process. In the normal person an excess of lactic acid arising from severe exertion or other causes, stimulates the respiratory center until the greater ventilation of the lungs provides enough oxygen to compensate for this increase, and the subject therefore quickly recovers even from severe dyspnœa when he comes to rest. Furthermore, although the previous inhalation of oxygen enables an athlete to undertake exertion with much less discomfort, to the cardiac dyspnœic of the type under consideration the administration of oxygen brings no relief, and consequently we are forced to the belief that in his case some connecting link between the supply and utilization of oxygen has been lost. If it be true, as held by many physiologists, that the interchange of gases between the blood and tissues is not simply a matter of diffusion, but that the capillary walls have secretory power that causes them to play an active part in this process, we can see how in advanced cases of arterio-sclerosis, with many capillaries destroyed and others impaired, oxidation in the tissues may be imperfect so that lactic acid is not destroyed, but enters the blood and by reducing its alkalinity diminishes its capacity for transporting carbon dioxide which will accumulate in the tissues and cause a gradually increasing tissue asphyxiation. Or more probably the defective circulation consequent upon arterial changes impairs the nutrition of the glands and other tissues in which enzymes are formed, so that there is a scarcity of these necessary to complete the oxidation of lactic or any other acids which may be formed in the processes of constructive and destructive metabolism. This would probably explain the benefit that follows the prolonged use of alteratives such as the iodides of potash or mercury, which are known to have a very powerful influence on the glandular structures and nutritive processes of the body, although the manner in which they attain this end is still a matter of conjecture. The failure of the different alkalies when given by the mouth to influence the dyspnœa was a great disappointment because a diminished alkalinity has been shown to exist in this type of dyspnœa and there can be no doubt that the presence of acid in the blood, even in minute quantities, stimulates the respiratory center to greater activity. Bicarbonate of soda was given because of its great reputation as an atacid, especially in acidosis, potassium citrate because of its vaunted ability to render the urine and blood alkaline, as well as on account of the claim that in cases of lithæmia it promotes oxidation; citrate of soda for the reason that it is supposed to enter the blood as such where it is converted into carbon dioxide and sodium carbonate, thereby increasing the alkalinity of the blood and urine, and being eliminated in the urine as a carbonate. Sodium phosphate was the last selection made, and this was tried for the reason that physiologists have found that it re-acts towards carbon dioxide much in the same way as blood; so that formerly it was thought that phosphates in the blood plasma were an important factor in the evolution of the carbon dioxide. The chloride and lactate of calcium were also used, but failed to relieve the dyspnœa, in fact none of the preparations mentioned yielded the desired results. In stating that these different salts are supposed to have an alkalizing effect on the blood I am not giving my own opinion, but simply repeating the statement made by many writers; the data upon which their conclusions are based are not mentioned, but it would appear to be the opinion that because the alkalinity of the urine is increased, a similar change must take place in the blood. It is extremely doubtful whether alkalies or acids *taken into the stomach* ever materially affect the blood reaction. This opinion is based not only on such therapeutic

failures as those just mentioned, but also upon the general experience that such preparations as citric or lactic acid may be given in sufficient quantities to produce an extreme and even painful acidity of the urine without inducing any of the cardiac symptoms described by physiologists as accompanying the injection of even a minute quantity of acid in the blood. There is some provision of nature to maintain the blood reaction fairly constant during health, else there would be a continual variation with every meal according to the amounts of acids and alkalies ingested, and this protective influence cannot always be ascribed to a neutralizing combination with other food stuffs, as the result is the same when they are taken alone. It would look as though they entered into some combination in the lymph or tissues before entering the blood that rendered them ineffective, and that their elimination in the urine was accomplished by the decomposition of these compounds through the secretory activity of the kidney. The general acceptation appears to be that all alkalies are neutralized by the carbonic acid of the tissues and circulate in the blood as neutral bicarbonates without altering its reaction; and that while an excessive supply of alkali, by combining with the body acids, might be expected to render the tissues more alkaline, this is obviated by the rapidity with which the excretory glands remove the excess.

In this way there is more *available alkali* in the blood and tissues during alkali treatment, but it can be utilized in the neutralization of acids only when the carbon dioxide can be removed from the neutral salts. The clinician must therefore inquire from the bio-chemist and physiologist whether in some of our cases of arterio-sclerosis there may not be changes in the tissue cells that retard such chemical processes or make them impossible.

This question is permissible because observations both upon men and animals warrant the conclusion that the alkaline carbonates which are prescribed or taken in various waters for their antacid effect, when administered by the stomach do not exhibit the toxic effects of the sodium and potassium ions upon the cardiac muscle and other tissues because they are so rapidly excreted by the kidneys. Probably this is perfectly true in the healthy man, but is it equally so in disease? Vichy water abounds in alkaline bicarbonates and is used with impunity by the majority of people, yet there are others to whom the treatment at the spa is refused, and I am informed that this rule includes all cases of cardiac asthenia. Personally I have had a number of patients who, while using Vichy water on account of its excellent antacid effects, became depressed, languid, averse to muscular exertion, and dyspnœic. Improvement followed rapidly upon discontinuance of the water, and upon its resumption the symptoms soon returned. I have seen symptoms of cardiac dyspnœa with reduced blood pressure occur in patients who were taking from twenty to thirty grains of potassium iodide daily, while a change to one of the preparations of calcium iodide or hydriodic acid obviated any unpleasant symptoms. This is the exception rather than the rule in patients suffering from arterio-sclerosis and there do not appear to be any special physical signs in the heart or blood vessels that aid in identification of the susceptible group. Hence the question has to be asked whether the interchanges that normally take place between chemical substances within the body are not facilitated by some functional activity of the tissue cells, and whether apparent discrepancies between the conclusions arrived at from experiment or observations of healthy subjects and the results obtained by the clinician at the bedside are not due to changes in the tissue cells. In regard to treatment this is of importance because an affirmative answer would imply that the practitioner must not content himself with any halfway measures, as for example an attempt to neutralize excessive acidity, but must also endeavor to restore the function to the diseased tissue cell or in some way compensate for it. We have an example of the latter in the treatment of myxœdema by the administration of thryroid gland preparations.

Outside the body oxidation is accelerated by the presence of an alkali, and consequently, alkalies have been administered in the hope of producing a more perfect metabolism; but, possibly on account of the rapidity with which the excess of alkali is eliminated or transformed into the neutral bicarbonate, the laboratory experiment does not find its homologue within the human body, at least the reported observations upon this subject are very contradictory. We expect that the true treatment of such cases must await the telling of the secrets of metabolism and organo-therapy, for the human body is neither a retort nor a test tube, but a whole chemical factory. At present I am treating some cases with thyroid extract, as that gland is reputed to play an important role in metabolism by promoting the oxidation of proteids, but the results are too imperfect for publication at the present time.

There is another feature regarding the dyspnœa of arterio-sclerotic patients that is worthy of consideration. Nervous irritability is one of the characteristic symptoms of arterio-sclerosis. These sufferers undergo a change of disposition, little things annoy them, and the consciousness of the fact annoys them still more, their emotions are more easily influenced than formerly, and either joy, sorrow or mental effort may induce an attack of dyspnœa. It seems to me that in many instances the respiratory center participates in this cerebral hyperaesthesia, so that normal quantities of carbon dioxide or any of the acid products of metabolism may more readily induce increased respiratory movements, in other words, that in some cases the cardiac dyspnœa may be due more to hyperaesthesia of the respiratory center than to diminished alkalinity of the blood. Recognition of this condition explains the dyspnœa that awakens the patient from his sleep, because it is generally admitted that this hyperaesthesia is the result of impaired cerebral nutrition; and during sleep the fall of cerebral blood pressure and the shrinking of

the brain substance in consequence of vascular relaxation throughout the body generally still further impairs the nutrition and increases the irritability of the respiratory center so that it responds to a stimulus from blood in which, as metabolism is diminished at this time, there is no reason to expect excess either of carbon dioxide or any other form of acidity. Sometimes the condition is relieved by a combination of digitalis or strophanthus or caffeine with one of the nitrites, as it would seem that a combination of a vaso-dilator and cardiac stimulant is more effective in maintaining an adequate circulation through the sclerosed vessel, thereby removing the irritability of the nerve centers arising from impaired nutrition, but in a very large number of cases the patient's distress is not relieved until small doses of morphine, one thirty-second or one twenty-fourth of a grain, every eight hours, are added to the mixture.

The most complete discussion of this subject with which I am familiar can be found in a composite article by Lewis, Ryffel, Wolf, Cotton and Barcroft, entitled "Cardiac and Renal Dyspnœa," that was published in *Heart,* Vol. 5, No. 1, 1913. This investigation consisted in a most elaborate examination, at the bedside and in the laboratory, of fifteen patients; and although ten of that number had pleural effusion, ascites or general dropsy, still, in the judgment of these gentlemen, such mechanical obstructions to respiration were not sufficient to explain the degree of dyspnœa. This is perfectly possible but, as it is a question of individual judgment, those readers who have not seen the patients cannot help wishing that such respiratory embarrassments had not existed. It is interesting to note that abnormal fullness of the veins is mentioned as one of the clinical features in thirteen out of the fifteen cases, no reference being made to the condition of the veins in the other two patients; and in only two of the whole series of fifteen cases was cyanosis well-marked, in the others it was very slight or entirely absent. In only one case did the haemoglobin fall below 75 per cent., and in the others it ranged from 80 to 102 per cent. In all of the patients there was some degree of acidosis or diminished alkalinity of the blood. They express the opinion "that as no evidence of the formation of an abnormal amount of any organic acid is to be obtained from examination of the urine, so this acidosis appears to be another instance of the same phenomena of the retention of acids in excess of bases which is shown during residence at high altitudes." The thought, therefore, was perfectly natural that if these forms of cardiac dyspnœa resemble that of high altitudes some benefit might be expected from a line of treatment calculated to produce changes in the blood similar to those that occur during the process of adaptation. This consists in an increase of red corpuscles to seven or eight millions per c. m. m., at first probably by concentration of the blood, but ultimately from increased activity of the blood-forming organs. During the establishment of adaptation the pulse rate is accelerated so that in the rarefied atmosphere adequate oxygenation will take place by blood abnormally rich in haemoglobin circulating more rapidly. Most of my cases have shown haemoglobin to be present only in the proportion of from 65 to 85 per cent., and under the administration of arsenic and iron there was some improvement, but not enough to awake enthusiasm. A review of the tabulated statement of the gentlemen already mentioned is no more encouraging, as they report cases of orthopnœa in which there were five and even six million red corpuscles to the c. m. m., with from 95 to 102 per cent. haemoglobin.

The failure of alkaline treatment and inhalations of oxygen to relieve the dyspnœa, together with the co-existence of full veins, abundance of red corpuscles with high color index, and the absence of cyanosis still farther impresses one with the ideas already mentioned that in arterio-sclerosis there is some flaw which prevents the tissues from utilizing the oxygen supplied to them, and suggests diminished function owing to degenerative changes in the vascular endothelium as a possible cause. For many years evidence has been accumulating that these cells have distinct chemical functions, and the recent work of Hooper and Whipple, who have shown by experiments upon animals whose livers had been excluded from playing any part in the process, that vascular endothelium in common with the mesothelium of the pleura and peritoneum have the power of transforming haemoglobin into bilirubin by splitting off the iron from the former demonstrates conclusively that these cells can no longer be regarded only as having a mechanical function, such as affording protection to different surfaces or forming a system of tubes for conveying the blood throughout the body, but that they are active participators in the chemical processes of the body. Possibly the foregoing remarks may cause some amusement to the physiologist or bio-chemist, because the problems are so self-evident to him, but on the other hand, the clinician not infrequently smiles at the dogmatism of laboratories and admires the unblushing assurance with which at some subsequent period, a stoutly defended theory is discarded as absolutely untenable.

Nevertheless, on this occasion I am willing to be the scapegoat if the sacrifice makes plain the necessity for a closer association between the different departments of medicine, and emphasizes to our undergraduates that anatomy, physiology and chemistry are not studies preliminary to medicine which may be neglected so soon as a diploma is obtained, but that they, too, are progressive subjects, that the anatomist, physiologist and chemist have still much to learn, and that as the clinician is the man who must utilize and turn to practical account the discoveries of these other gentlemen he can only hope to do so if he keeps himself informed regarding the work that they are doing.

The scope of medicine is too great for a man to do this by his own effort; it is only possible for him to attain this end when he is so situated as to confer at will with the individual observers or to hear from them at intervals a summary of the progress made in their departments.

SYPHILITIC ARTHRITIS.*

By LEONARD W. ELY, M. D., San Francisco.

Morbid processes in joints are comparatively simple in their essentials. While there have been extremely involved and complicated classifications made at various times, of bone and joint inflammation, yet the fundamentals of these classifications are comparatively simple. In order that you may know how to apply what I am saying to the ordinary types of disease, I would call your attention to the fact that the type of inflammation which we are going to speak about mostly tonight has an analogue, known by various authors as atrophic arthritis, as infectious arthritis, as proliferative arthritis, and as rheumatoid arthritis.

If the marrow and the synovial membrane be exposed to an irritation, they respond in a certain way. If, for instance, we have a tubercle in the marrow of the end of the bone, spreading and involving more or less of the marrow, we will get an atrophy of the bone. If the disease breaks through and involves the joint, we will have a proliferation of the synovial membrane. Instead of forming a comparatively flat, smooth membrane, it will be thrown into folds, and what is known as villous arthritis or synovitis will result. If the gonococcus be the invading organism, practically the same thing takes place. Typhoid and pneumococcus joints have the same pathological fundamentals, and syphilis precisely the same. Thus, a syphilitic inflammation in the end of the bone causes a rarefying osteitis, an atrophy of the bone trabecula, and a villous condition of the synovial membrane. As a result of this, the synovial membrane will encroach upon the cartilage from its side, displace the cartilage, tend to spread out at its circumference, and also over its surface, while at the same time the disease in the marrow not only will cause a rarefying of the bone trabeculae but will also shut off the nutrition of the cartilage and perforate it from its under surface.

Cartilage, when it is diseased, is no longer immune to morbid processes, but is perforated by these syphilitic granulations in the marrow. There is nothing radically different in any of these diseases, in the reaction of the bone, of the bone marrow, of the synovial membrane. They all cause practically the same changes. Now, pathological identity means identity of symptomatology and physical signs. Practically, the symptomatology of all these diseases is the same. In a general way, each has its peculiar points, but there is nothing absolutely characteristic about the course of any one of them, nor is there anything characteristic about the symptomatology or of the physical signs. Hence, it follows that tuberculous arthritis cannot be differentiated from any other member of the group by the clinical symptoms.

I was taught in my younger days that syphilitic arthritis was so rare in children that it could practically be disregarded as far as clinical work was concerned. On the contrary, the more you look for it, the oftener you find it. If a joint be inflamed for any reason, the first, the peculiar characteristic of the inflammation, as with the inflammation of any other organ of the body, is a disturbance in function. If an inflammation exists in the kidney, the kidney function suffers. If an inflammation be present in the heart or in the lungs, the same thing happens. If an inflammation, no matter what its cause, be in the joint, motion is usually the first thing to suffer.

Tuberculosis starts in the epiphysis, not so often as syphilis, but very often; and either can start in the synovial membrane and later involve the marrow. Syphilis usually involves the shaft and rarely the ends of the bone. If the shaft and the end of the bone are both involved, the diagnosis of syphilis is probable. There is no known way of diagnosing syphilitic arthritis except, I believe, by the therapeutic test. If we know that the patient be syphilitic, we have a strong indication, but a tuberculous joint may exist in the syphilitic individual, as the syphilitic joint may exist in a tuberculous individual.

Given a case of a supposed syphilitic arthritis, the joint will usually be swollen. The swelling may be due to the thickening of the synovial membrane, to fluid in the joint, or to both. Muscular atrophy and muscular spasm may be present or absent. One joint may be involved or several joints. Various writers describe peculiar forms of the disease and speak about the synovitis of hereditary syphilis. Sometimes the disease does exist as a comparatively painless synovitis, but the marrow may be involved as well.

There are four frequent forms that the disease may present: One, synovitis; another, what is known as true arthritis—inflammation of the synovial membrane and of the bone end itself; another, the peculiar multiarticular form of arthritis which simulates that caused by the diplostreptococcus of Rosenow. Then there is a late form of the disease known as the Charcot joint.

Pain may be prominent, or it may be absent. The peculiar painless joint is suggestive of syphilitic synovitis. Tuberculosis usually has a good deal more pain than syphilis, but not always so. If only the synovial membrane be involved, tuberculosis may also be accompanied by very little pain. As a rule, the disease is slower and less destructive than is tuberculosis. If it has existed for a long time, if it has perhaps disappeared for a while and then returned, and if it is not painful, the indications are that it is not tuberculosis but syphilis. The diagnosis comes down as a rule to one of five or six morbid processes; the first, tuberculosis; the second, syphilis; the third, gonorrhea; the fourth, typhoid arthritis, which is extremely rare; the fifth, diplostreptococcus of Rosenow; and the sixth, trauma. In the X-ray of all these diseases, we may find practically nothing but a thickened synovial membrane; but as a rule, we will find an erosion of the cartilage, and a rarefaction of the bone. In lues, the process is apt to be on the joint side of the epiphyseal side; in tuberculosis, on the shaft side. Tuberculosis usually affects the synovial membrane and the marrow. Gonorrhea usually affects the periosteum and the synovial membrane, rarely the marrow.

* Read before the Alameda County Medical Association, January 18, 1916.

Lues, as a rule, affects the marrow and the periosteum, not so often the synovial membrane. The Wassermann test helps, but it is not conclusive.

The weak point in all our work on syphilitic bone and joint disease is that we are compelled practically to accept the diagnosis of lues when the disease disappears on the administration of antisyphilitic drugs. It is no proof. We know it, yet it is all the evidence we have at hand.

The good old rule never to operate upon one of these tuberculous joints until it has been proved nonsyphilitic by administration of antisyphilitic remedies is a very safe one. No one seems to be immune from this mistake. I stand here emphasizing this to-night, and I have no doubt that within two or three months I shall make the same mistake.

The only way to solve this problem is not by looking at one joint, but by looking at the patient as a whole—going over him from head to foot, thinking what the disease may be and making our diagnosis by exclusion.

The treatment of syphilitic arthritis is simple. If the Wassermann test is positive, use salvarsan followed by mercury and the iodids. If the Wassermann test is negative, and you are not very sure of your diagnosis and wish to be on the safe side, use mercury and the iodids, mercury especially. The iodids do not seem to have very much effect on these syphilitic joints. If the Wassermann test is negative and we are very suspicious of syphilis, then administer salvarsan followed by mercury. It is rather remarkable that very often these joints will improve on the administration of mercury for a while, and then will come to a standstill. A dose of salvarsan seems to hasten things. Then it is well to go back to mercury. Strange to say, immobilization has no effect upon them whatever.

It is almost diagnostic of tuberculosis that when the joint is put at rest the improvement starts in. Syphilis does not respond to immobilization, but on the contrary, often grows worse. Plaster of paris and braces do no good, not even as adjutants. It is interesting to see in some instances how an apparently hopelessly distorted joint with its architecture destroyed, will re-form under appropriate treatment.

Syphilis can affect fibrous tissue, red marrow and yellow marrow, or synovial membrane, whereas tuberculosis affects nothing but the lymphoid marrow and the synovial membrane. Syphilis does not have any distinct boundaries. You cannot say when a child, three or four years old, is brought to you for treatment, "This cannot be a syphilitic synovitis, because congenital syphilis in the child appears in such and such a week, and is steadily progressive or tends to recover, or what not." You cannot bound the disease or its appearance in the joint by artificial rules. There is no known way that you can tell syphilitic joint by appearances. Do not think that if an inflammation comes at a certain time, syphilis is barred out. It is never barred out. Syphilis is never out of the question. Do not always depend on your periosteal thickening. Look for it. If you get it, you are pretty sure; but if you do not get it, do not rule out syphilis.

As I said before, this all must be taken with a grain of salt. We cannot take a joint into a laboratory, and say it is or is not syphilitic. In tuberculosis, we can remove fluid from a joint and inject it into a guinea pig. If the guinea pig has tuberculosis, then the joint is proven to be tuberculous. If the guinea pig is healthy, the joint was not tuberculous. If we remove a piece of tissue from a tuberculous joint, and find characteristic tubercles in it, we say that it is a tuberculous joint. We cannot do that with a syphilitic joint. The best we can do is to say, "This may be syphilis." We have no infallible guide. As a rule, the spirochaete are not to be demonstrated. The only rules that we can say we possess are always to be on the lookout for syphilis when we find a slow inflammation in a joint; always to be on the lookout for it when we find a rapid inflammation in the joint; never to lose it from our minds, to remember that in its florid stage, the joint may be swollen and the bone rarefied, that cartilage may be eroded at its margin, perhaps eaten out in its center. It is all more or less vague. The vagueness disappears when the arthritis clears up under syphilitic treatment. The vagueness comes in its confusion with the other diseases, and the vagueness disappears if the disease clears up under antisyphilitic treatment.

Discussion.

Dr. Milton: Dr. Ely has left little else to be said on the subject. You will have to remember in treating joints that joints are subject to syphilis, and in large clinics where this subject is gone into pretty thoroughly, it is found that a large percentage of the joints are syphilitic, as high as eight per cent. in some clinics. So we have to remember that the thing is about us, it is with us.

Years ago when I went to college, they used to tell us that syphilis and tuberculosis were incompatible; if you got one, you could not get another, and vice versa. We know now that it is not so. Now, we have to remember that joints can be syphilitic, and we have to be on the lookout for it.

Dr. Buteau: This is too good a paper to let go undiscussed. If it is not more discussed, it is simply because Dr. Ely has thoroughly covered the subject, and because we recognize his experience and feel a little timid in bringing forth any arguments that might possibly suggest themselves to us.

I remember many times when I have had opportunity of visiting some of the larger clinics in the East that I would come back again and again, and say, "Well, they do not have the kind of cases back there that we have here—at least, the kind of cases that I have. My bad cases seem to be worse than any of the cases I see in some of the bigger clinics that are handled by masters in our profession." After a time, I began to realize that it was the way they handled their cases. They did not seem so serious because of the intelligent way in which they were approached. The operations that were awful to me were simplified often and made easy by these master men because they arranged their field so neatly. The rest of the work was readily done. And I was impressed here to-night by the way the Doctor approached his subject and the concise manner in which he presented and simplified it, and to my mind made it appear that these joint troubles were not such complicated cases to master after all.

There is only one question I would like to ask: Dr. Ely has mentioned six different kinds of troubles or affections with which syphilis of the joints might be complicated or confused in making a diagnosis. I wonder if we might not add malignancy. I know that is more rapid in its development of symptoms and yet in my experience again and again have I called it into question in making the diagnosis.

Also another question I would like to ask the Doctor: "Would it not be well at times to assume the diagnosis to be tuberculosis instead of syphilis and possibly to put the joint at rest and note the results of that treatment, as well as to assume that it was syphilis and put the patients under the treatment of antisyphilitic remedies?"

Dr. Ely: Dr. Buteau's remarks are well taken. Malignancy is very frequent at the end of the bone and is difficult to distinguish from syphilis. As a rule, a malignant disease does not involve the joint. There are joints that are so typically tuberculosis that you will immobilize them and will not give antisyphilitic treatment. That is correct, and yet, if you do that, always be on the lookout to prove that you were wrong. Always look for bony thickening, for an enlarged spleen, for something that may suggest syphilis. All these diseases are liable to secondary infection. Tuberculosis, especially, runs its regular course. If proper treatment is not administered or in spite of proper treatment, the diseased area may break down and a secondary infection may be added to it. If a secondary infection be added, the diagnosis is easy. As a rule, the sinus in typical, but do not think that you can make an invariable diagnosis from the appearance of the sinus. This is another error that we have just struggled out of after many years. Very often there is the typical pale, flabby look of a tuberculosis sinus. A gonorrheal joint, as you know, may at any time become secondarily infected; so may a typhoid joint, a pneumococcus joint. Some are more liable to secondary infection than others.

What I have given you is not only the result of laboratory work, but it is a struggling out of a confusion, a graduation from an idea that especial acumen could be cultivated to diagnose these joints. We used to be taught that they were perfectly simple. If a patient was brought in with a chronic inflammation of a joint, it was assumed to be tuberculous. There was practically no discussion. It was put in plaster of paris, and it went on in its treatment for years. I would make a diagnosis of tuberculosis or gonorrhea or syphilis. Sometimes I would strike it right and sometimes I would strike it wrong, and then I was crestfallen. I thought it was my own stupidity. At Roosevelt Hospital, where we had quite an active clinical service and quite a friendly rivalry, when anything interesting like that came along, each man would make his diagnosis and would bet on it, and the youngest man in the clinic would be just as liable to upset the oldest as the oldest to upset the youngest. It seemed to be a mere matter of chance. Then I set to work with these joints that had been removed and I put them under the microscope. I collected their histories, found out the diagnoses that had been made upon them by various men, the operations that had been done by various men, and I found that about one-third of them had been erroneously diagnosed. In the vast majority of instances, perhaps one man showed a little better average than the others. Those joints included the work of some of the biggest men at that time in New York, some of them were my own joints. From that it soon became evident to me that the diagnosis could not be made on the usual lines. Then from that and a study of the pathology of joint tuberculosis, it dawned on me how the diagnosis should be made. It was not to be made by any general appearance of the bone, not by any particular, you might say general, appearance of the synovial membrane, not by any particular appearance of the marrow in gross. Submit a piece of a joint to a pathologist. He will look at these various tissues, and if he find a tubercle in the synovial membrane or in the marrow, he will say that it is tuberculosis. If he do not find a tubercle, he will call it chronic inflammation—non-tuberculous. The features of both are the same, and the only point that microscopy did for the diagnosis was to say "chronic inflammation," tuberculous, or non-tuberculous. If a man cannot make it in the clinic from an inspection of the joint, and the pathologist cannot make it except from the presence or absence of the tubercle, how can we make it? From the X-ray? Well, take your X-rays. Take the best men in X-ray diagnosis. Have them put their diagnoses down, have them follow their cases along. You will find the X-ray man cannot do it. The X-ray features are all the same. History? The man who will go deepest in the history will guess right more often. If he pulls up the patient's trousers, finds the knee swollen, and says chronic rheumatism from the appearance of the joint, he will miss it most often. Let him sit down and enquire into the patient's health—how many times he has had a Neisser infection; if he ever had syphilis; if he ever had pneumonia, typhoid fever; how many joints were involved and in what order; did the disease come on suddenly or slowly? Let him ask, "Are your parents alive?" "What is your occupation?" The deeper one goes into the history, the more often one will guess right. A thorough physical examination must be added, and the usual laboratory tests. Then one is in a position to guess right in the majority of instances. If one will then on top of hard thorough work and careful examination of his patient, recognize the fact that one cannot make a positive diagnosis, and if one will keep one's eye open to the possibilities of error, one will do as well as is possible.

THE TONSILS AS A FOCUS ON INFECTION.*

By JOHN MACKENZIE BROWN, M. D., Los Angeles, Cal.

It has long been recognized that the tonsil plays an important role along with many other structures of the body, as a possible site of focal infection. But it has been only during the past decade that sufficient emphasis has been laid on the relative importance of the tonsil in comparison with other focal lesions in the production of morbid processes in other locations, and general systemic diseases. The work of such men as P. K. Brown, Billings, Shaumbaugh, Rosenow and others, has demonstrated conclusively that many pathological conditions of obscure origin are due either directly, or indirectly, to bacterial or toxic absorption from pre-existing or active processes in the tonsil.

The question naturally arises, why are the tonsils so closely related to systemic infection? It is because they are probably the most often infected of any of the possible sites where pathogenic organisms may be harbored. And this susceptibility to infection appears to be mainly due to their anatomical structure and position.

The tonsil, situated as it is near the commencement of the alimentary tract, is surrounded at all times by a flora of both pathogenic and non-pathogenic germs of the mouth. The crypts pass deeply

* Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 20th, 1916.

into the lymphatic tissue proper, in various directions, forming pockets or recesses in which microorganisms find warmth and moisture which plus lowered tissue resistance means multiplication and invasion. Again, many of these tonsillar culture tubes are long, narrow and branched, these facts together with the inclination of the crypts, favor stasis. Strictures become comparatively easy following even slight inflammatory conditions, thus producing pockets or foci where incubation may continue. In other words, the tonsil after a thorough infection becomes a veritable culture tube for the bacteria that inhabit it.

A word as to the bacteriology of the tonsil with respect to focal infection seems necessary to show, if possible, the etiological relationship between disease existing here and other acute and chronic manifestations. Recently Rosenow has published an extensive article on the elective localization of the streptococci, showing how focal lesions both acute and chronic, are responsible for many and varied systemic conditions. He states that foci of infection afford opportunity for bacteria to grow under varying degrees of oxygen pressure, and in mixed culture, both of which have been shown to cause changes in virulence and other properties of bacteria. He cites such systemic infections as rheumatic fever, appendicitis, and ulcer of the stomach, following the acute symptoms in follicular tonsillitis being caused by the streptococcus group of organisms. Rosenow's work was based upon animal experimentation, and he has apparently proved his results conclusively, by the finding in the focus, streptococci having elective affinities for the same structures in animals.

Davis of Chicago, by careful laboratory investigations of tonsils removed for various systemic disturbances, found hemolytic streptococci in twenty-eight cases of arthritis. In one case in association with pneumococci, in another with the streptococcus mucous. In ten cases of nephritis, nine showed hemolytic streptococci, pure or predominant in the crypts, so that these serve as examples of the predominance of the streptococcus group. Among other infecting organisms may be mentioned staphylococci, b. influenza, b. diphtheria, b. coli cummunis, and b. tuberculosis, the latter, it has been demonstrated by Wood, and others, can be made to invade and pass through the tonsil without producing tuberculosis of the tonsil itself.

Again Smith and Barrett have shown that the endamoeba buccalis has been found in the crypts and tonsillar tissue of extirpated tonsils, and they state that this organism is not only responsible for Riggs disease (pyorrhea alveolaris), but has many general manifestations as well.

The tonsil, I have emphasized, is one of the commonest containers of focal infection, and it necessarily follows that many acute and also chronic disturbances attributed to focal infections in general, applies to the infection of this organ, except with greater frequency. Inflammation of the tonsils has long been found to be associated with acute rheumatic fever, but not until the researches of Poynton and Paine was this relationship definitely understood as that of cause and effect, and now as Halsted of Syracuse states, clinicians and bacteriologists alike are agreed that the most common habitat of the micrococcus rheumaticus of Poynton and Paine is the tonsil. It may lie quiescent for months or years until the lowered vitality of the individual invites invasion, and then migration to a seat of election may occur in the joints, tendon sheaths, valvular endocardium, pericardium, or the central or peripheral nervous system.

Rosenow has produced appendicitis experimentally in animals by the injection of tonsillar extracts. He has produced in the same manner other lesions from various strains of streptococci.

In connection with chronic disease, the role played by focal infection from the tonsils seems quite as important, but research along this line has been still more recent. A few lesions, however, may be mentioned as at least influenced, if not caused, by intoxication or bacterial invasion from the tonsil. Probably heading this list would come the chronic arthritides upon which so much work has been done of late. I will admit mostly, in an empirical way, but in a review of the literature on this point, I find reported many cases of chronic deforming arthritis that have been greatly improved by enucleation of the tonsil, which in most cases showed the presence of the streptococcus hemolyticus.

Not only does the focal lesion in the tonsil seem to be responsible for the many chronic conditions, but writers have laid stress on the slow chronic intoxications or which really in many cases would come under Adami's group of sub-infections, which are undoubtedly responsible for many of the premature degenerative changes seen in many individuals and which produce effects varying from chronic indisposition to early degenerative changes in the cardiovascular and nervous systems and the chronic nephroses. Kyle, of Philadelphia, emphasizes asthma as a disease caused by toxic absorption from the tonsil, and Tschiassny reports a case of recurrent bronchial asthma in which removal of the tonsils resulted in a cessation of the attacks. Beck, of Chicago, also states that exophthalmic goitre undoubtedly is caused directly, or through alterations of the internal secretions by toxicity due to focal lesions of the tonsil. Again, to ouote Billings, who says: "There is no doubt that the insidious, slow, degenerative processes which occur in many patients who arrive at the meridian of life are due to slow intoxication from chronic focal infections variously located, one of the most frequent of such focal infections being the tonsil."

It is not my intention in a paper of this length, to show how many different and varied conditions might hypothetically be caused by diseased tonsils, but how intimately some of the more important conditions are related in this way.

In any given case of acute or chronic disease thought to be due to tonsillar infection, after due consideration of other possible foci, how shall we arrive at a conclusion as to whether or not the tonsil should be removed?

In a case of acute tonsillitis complicated by an

intercurrent and seemingly directly associated condition, such for example as acute cardiac or renal disease, acute rheumatic fever, Sydenham's chorea, etc., the rational procedure seems a tonsillectomy.

In the case of chronic disorders the appearance of the tonsil often lends valuable information, the septic tonsil is frequently dark red in color, the crypts may be sealed over and superficial abscesses may be seen on its surface, the anterior and posterior pillars may be unduly adherent. Pus with cellular detritus, the result of previous tonsillar inflammation, may be squeezed from the crypts. The condition of the neighboring structures often gives additional evidence, the pillars may be of a deep red color, edematous, and lymphoid patches may be found on the posterior wall of the pharynx just back of the tonsil. The size of the chronic tonsil has nothing whatever to do with its relation to septic foci, in fact, the hypertrophic tonsil seems to be less a factor in the production of these various manifestations than the smaller imbedded tonsil. Again, in many cases what appears to be normal-looking tonsils when seen in situ, after enucleation I have found to contain pockets of pus hidden from the exterior.

In some cases I believe there is no way of telling whether or not the tonsil is infected so that if the external evidence does not seem sufficient to warrant removal for definite and recognizable lesions present, I strongly suggest the consideration of their removal if chronic infection or intoxication, seemingly points to this situation as the cause of trouble, after the careful exclusion of other possible foci. At the present state of our knowledge, regarding the connection between focal lesions, and metastatic infection and intoxication, I am inclined to take the empirialistic view, and look with suspicion on any tonsil found in an adult having unexplainable chronic symptoms. Here, I cannot emphasize too strongly, the necessity for thorough enucleation which is the teaching set forth by Billings. To leave the smallest portion of tonsillar tissue, means possibly a focus tightly sealed, when scar formation is complete, thus defeating our primary object. This fact explains the disappointing results seen in some cases, where a supposedly complete tonsillectomy did not give the promised relief. So the thought I want to leave with you, in this connection, is: Be just in judging; what by some is termed indiscriminate tonsillectomes, and study your series of cases which you count as failures, with this point in view. If this is done I think you will agree with me when I state that in conditions where you lay the fault to the tonsil, a thorough and careful enucleation is the only safe procedure to follow.

I wish to review briefly a few cases, although our highest hopes in every particular were not realized, however, in the main our efforts have been encouraging, and our course of action seems justifiable.

J. P., boy, age 7. Has had a superficial keratitis of the right eye for four years, during which time there were recurring attacks of acute tonsillitis, and associated with these attacks the eye condition became worse. The case was under the treatment of oculists during this time, but however the condition remained unchanged. The tonsils on examination were found diseased and their removal advised. One week after the tonsils were enucleated, the eye began to clear up, and was apparently normal in three weeks, and has remained so for the past four months.

A. P., age 22. Patient entered hospital complaining of headaches and weakness. Blood pressure 200 m.m. Urine showed considerable quantity of albumin with hyaline, and granular casts. Later he developed uraemic symptoms and at times became delirious. There was no history of acute nephritis or acute infectious disease, but a history of recurrent attacks of acute tonsillitis; on examination the tonsils were enlarged and clearly septic. Enucleation was advised, and done. The condition at this time was almost hopeless, as the kidney function was greatly impaired, and the patient's general condition was becoming rapidly and progressively worse. The results were quite unsatisfactory. The general condition did not improve, and the patient died three months later.

H. M., age 25. History of recurrent attacks of acute tonsillitis, the tonsils were supposedly removed three years previous. Acute nephritis a little over two years later, following acute tonsillitis. Albumin and casts have been constantly found in the urine since. Examination showed a small stub of one tonsil which was clearly septic, this was removed. His general condition commenced to improve immediately, also there was very much less albumin and fewer casts in the urine. At present time, a year and a half after the operation, he still has a trace of albumin and an occasional cast, but his general condition is excellent.

H. S., age 54. History of repeated attacks of tonsillitis all her life. At the age of 40 arthritic symptoms developed commencing in the meta carpal and phalangeal joints, the condition advanced rapidly with deformity and severe pain until a few years later she was a chronic invalid from arthritis deformans. The arthritic condition was always more painful during an attack of tonsillitis, which fact, along with local evidences in the tonsils seemed sufficient grounds for their removal; after enucleation the joint condition became stationary and the pain began to subside, she was able to do her own house work in six months later. At present, four years after operation, she is in good health, and comparatively free from joint disturbance.

M. S., age 22. During an attack of acute tonsillitis she developed an acute nephritis which gradually improved, but the urine continued to show the presence of red blood cells, granular casts, and a trace of albumin, and during the next six months there were several acute attacks with increase of all the kidney symptoms. The tonsils in the patient were chronically inflamed, and after the careful exclusion of all other possible foci, their removal was advised. Four years have elapsed since enucleation; the urine still shows a few red blood cells and granular casts, but the acute exacerbations have entirely ceased. The general condition is excellent.

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Discussion.

Sanford Blum, M. D.: The role played by infective foci in the etiology of endocarditis seems to be regarded as a new discovery. It is not very new. It has merely received wider recognition since it has been presented by men in more prominent positions; but the association has long been known and recognized. In 1902 I presented for a Master's degree, at the University of California, a thesis entitled "The Etiology of Endocarditis with Especial Reference to Bacterial Agencies." This paper was published in American Medicine, January 17, 1903, Vol. 5, No. 3, page 94 seq. In it I stated that "all bacteria pathogenic to the individual may cause endocarditis under the proper conditions. There must be a locus minoris resistential and the bacteria must be in the blood. They may enter the circulation from various sources—from an abscess of the foot (Winge's case), from the septic womb, from the intestines." But no single case of endocarditis has, so far as I am aware, been positively proved to have emanated from infected tonsils. Many cases of endocarditis have been discovered after tonsillitis, but post hoc does not prove propter hoc in these cases.

It has been stated to-day that when endocarditis exists, removal of infected tonsils (assumed to be the source of infection), should halt the process and prevent further destruction from the endocardium. Even if it should be assumed that the tonsils were the original focus from which the endocardium became infected—it seems illogical to conclude that, after the endocardium has become infected and a metastasis established, removal of the distant focus would check the process. Nor has tonsillectomy had this beneficent result in endocarditis cases which I have seen.

In a paper, "The Proper Position of Tonsillectomy in Pediatrics," read before the California Pediatric Society April 22, 1915, I cited cases of endocarditis beginning subsequent to tonsillectomy. Koplik (American Journal of Medical Sciences, July, 1912), reports similar observations. J. Herbert Young (Boston Medical and Surgical Journal, September, 1915) has published reports of 21 cases of tonsillectomy which he had under observation for two years following operation. Twelve of these cases had endocarditis before tonsillectomy, while 17 had endocarditis after tonsillectomy. In one case acute endocarditis was present, five days after operation in a child, whose heart had appeared normal before operation. In a second case endocarditis developed two weeks after tonsillectomy. The above quoted observations appear to imply that tonsillectomy not only does not prevent or check endocarditis, but may even be a factor in its causation.

Young's observations throw light on the relation of tonsillectomy to chorea. Of his 21 cases, 12 had chorea prior to tonsillectomy; 17 had chorea subsequent to tonsillectomy. Every case in which chorea was present before tonsillectomy, had from one to four attacks in the two-year observation period, subsequent to tonsillectomy, and five additional cases occurred after the operation. In the paper referred to above, "Proper Position of Tonsillectomy," I cited similar observations. These records indicate that the theory that tonsillectomy is a cure or preventive of chorea is false.

It is my privilege to acquaint Dr. Gundrum with an authentic case of endocarditis emanating from intestinal infection. In 1898, while serving in Escherisch's clinic in Graz, I saw an infant, which had pyocyaneus enteritis. There developed pyocyaneus septicemia and pyocyaneus endocarditis. Cultures of pyocyaneus bacilli were obtained from the feces and blood of the infant, and after its death, the same bacilli were identified in the verrucosities on the endocardium. Cultures obtained from the blood, were injected into the ear vein of a rabbit, of which I had lacerated the endocardium with a probe, introduced through the carotid, and pyocyaneus endocarditis developed in this rabbit. This case was published in the Centralblatt für Bakteriologie, Parasitenkunde, und Infektionskrankheiten, 1898, No. 25.

The tendency to condemn the tonsils, generally, as foci of infection should be criticised—as the theoretical benefits credited to tonsillectomy are not borne out by the facts. Simpson (Jour. A. M. A., April, 1915) observed, in Girard College, that scarlet fever and diphtheria occurred in the same proportions in tonsillectomized and untonsillectomized children. He reports also that a boy whose tonsils had been enucleated became a diphtheria carrier. There is at present (as I was to-day informed by Dr. O'Neill) in the San Francisco Isolation Hospital, a diphtheria carrier, who became such a year after tonsillectomy. It may be asserted that failure of tonsillectomy to fulfill its promises is due to faulty operation, but it is with tonsillectomy as it is performed that we have to deal.

FOCAL INFECTION INTESTINAL INVOLVEMENT.*

By F. F. GUNDRUM, M. D., Sacramento.

The development of a general invasion such as septicæmia or pyæmia from an originally localized bacterial infection has been a matter of medical observation and knowledge for many, many years. It has been but recently, however, that the relation of a once acute and now quiescent local infection to disease conditions in widely separated portions of the body has been recognized. Lubarsch has shown that a focal infection may remain dormant for a long time until some often extraneous event may bring about a new activity. The pioneer work in this field has been done for the most part by Billings, Rosenow, Davis, Jackson and others in this country. Their researches have shown that a local infection may become sufficiently chronic that it causes but comparatively slight disturbance in its own neighborhood, but may still give off active bacteria or toxins to the blood stream and produce lesions in remote structures. Further that organisms of the Strep-pneumo group may under some circumstances of oxygen supply undergo transmutation in type and pathogenicity.[1] Many different organisms have been isolated from lymph glands which lie upon the lymph channels

* Read at the Forty-fifth Annual Meeting of the Medical Society of the State of California, Fresno, April, 1916.

draining chronically inflamed joints, Streptococcus, B. mucosus, B. Welchii, Diphtheroids, etc.[2] The greatest majority of these sites of focal infection whose pernicious activity has been proven lie in and about the head, i. e. teeth, tonsils, accessory sinuses, etc. A less number have been found in the respiratory and genito-urinary systems.

There has been up to this time relatively very little written concerning the role of the gastro-intestinal tract as a location for these indolent cryptic infections. It is most likely that a healthy gastro-intestinal mucosa offers very little opportunity for the development of this sort of difficulty. Under some conditions, however, foci may be established which could result in absorption. Billings,[3] in enumerating various focal infections likely to prove dangerous to joints, heart, kidneys, etc., mentions chronic ulcers of the stomach or bowels; chronic appendicitis ("damage chiefly to cardio-vascular apparatus"), and cholecystitis and cholangitis ("damage to cardio-vascular apparatus and kidneys"). A chronic ulcer in and about the stomach probably very rarely offers a hospitable shelter for bacterial growth on account of the hydro-chloric acid. In a study of anæmias Schmidt[4] called attention to the frequent association of symptoms of intestinal inflammation and indigestion with achylia gastric, and suggested that it was possibly due to bacteria let through into the bowel living, not having been killed by hydrochloric acid as usually occurs. The achylia might be a factor in the establishment of a chronic infective focus. Further down in the ileum and colon small ulcerations of any sort and perhaps more particularly undermined ulcers have occasionally been suspected as sites of infection. Goldthwaite has pointed out in certain individuals with marked visceroptosis the dependent loops may become much more permeable and intestinal organisms, usually harmless, such as B. coli, Streptococcus intestinalis, etc., may develop pathogenicity in such an environment. All of these conditions mentioned while theoretically possible are, it must be admitted, in all probability quite rare, and indeed problematic. No one so far as I know has shown the origin of a definite arthritis to be such a lesion. There are two adnexa of the gastro-intestinal tract which are very common sufferers from acute and later residual chronic infection. These are the gall bladder and the appendix. It seems likely that the joint, kidney and heart diseases referable to infections of these structures are relatively small in proportion to those in which head infections are to be blamed. The work of Billings, Rosenow and others has been published so recently, however, that very little clinical observation has as yet been recorded. A somewhat careful review of current literature has failed to bring to light reports showing gall bladder or appendix responsible for any of the series of troubles we have now under consideration.

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3 Billings:—Arch. Int. Med. 1912. p 484.
4 Schmidt:—Harvey Lecture, 1913.

HIGH CALORY FEEDING IN CASES OF TYPHOID FEVER IN CHILDREN.*

By H. H. YERINGTON, M. D., San Francisco.

The question of diet in typhoid fever is without a doubt the most important phase in its treatment, and although the text books during the past hundred years and long before that have devoted pages to drugs, hydrotherapy, bleeding, ventilation, etc., only a few lines deal with dietetics.

In taking up the subject of caloric feeding I thought it might be of interest to quote from a few text books on medicine written by prominent physicians during the past century.

William Cullen: Practice of Medicine, 1816: under the treatment of fevers, considered any patient with continued fever, with muttering delirium, wasting and failing heart, in the "typhoid state" and wrote as follows: "From the commencement to the close of the complaint the drinks should be diluting, mucilaginous and mild. In the latter stages, where fever and inflammation have disappeared, and debility is considerable, a small quantity of wine may be advantageously allowed. So may broths and animal jellies, but until considerable progress shall have been made in convalescence solid animal food is totally inadmissible."

At this time no differentiation was made between typhus and typhoid, the latter being only a state in continued fevers.

John Eberle, 1830: Advocated bleeding followed by a cold bath and wine. He devotes twenty pages to the treatment of typhus, one-fourth of a page being given to the diet, of which he says: "With regard to the dietetic management of the disease, it is scarcely necessary to state that the simplest kinds of liquid nourishment are alone admissible. Of these, the patient should be allowed as much as he can be induced to take, more especially during the sinking stage of the complaint." He quotes Dr. Stoker as saying, "that in the late epidemic in Ireland, many patients who were brought into the Dublin Hospital began to recover almost immediately on being allowed the free enjoyment of mild nutritious food."

John Mason Good: Study of Medicine: 1829, speaks of sitting his patients on a stool and pouring 2 gallons of cold water over their unshaved heads, which proved successful in some cases, the fever being cut short in a day or two from its commencement. This method, he says is too violent after the first three or four days of the attack, and thereafter the body is sponged. Speaking of diet he allows his patients animal broths and jellies in alteration with farinacia. This concluded his remarks on diet.

Barlow: Practise of Medicine: 1856, says under continued fevers: "This term typhoid fever is to be regarded as synonymous with gastro-enteritis. If it be understood that the intestinal inflammation in this last case is of a specific

* Read before the Sacramento Society for Medical Improvement, January 18, 1916.

* From the Department of Medicine (Pediatrics), Stanford University.

character, this doctrine can have no injurious results."

He prohibits all muscular exercise, confines the patient strictly to bed and darkens the room. The diet at this time, he says, should be of the most unstimulating kind; milk and water, or thin barley water with an occasional cup of tea, will generally be sufficient, as long as the febrile excitement is great.

Later he says: "Dr. Alison observes that the 'disease' frequently runs its course quite favorably in very foul or close air" but he himself notes that when the patients are taken out of some of the worst houses in London and put in the well ventilated wards of Guy's hospital the prognosis is better.

Loomis: Practise of Medicine: 1894, says milk is the most suitable food, but fruits are not to be allowed in any case. He advocates cold baths beginning at 70 or 80 for a temperature of 105, which he reduces to 60 until the temperature reaches 103.

Osler: Practise of Medicine: 1906, allows milk, eggs and water during the febrile stage, with no solid food until the fever has been normal for ten days. His dietary is given as follows: "Milk 4 ounces with 2 ounces of lime or soda water, alternating every two hours with 4 ounces of albumin water, made from the white of one or two eggs." He says: "it is possible that we give too much food. Of late years the disease has been treated by what has been called therapeutic fasting—little or no food only fasting."

This brings us up to the period of high caloric feeding in typhoid advocated during the past ten years by Coleman of New York, and followed by several physicians with good results since then.

During a service as house physician in Bellevue Hospital during the fall of 1909, I had an excellent opportunity of watching Coleman's adult patients during an epidemic, and caring for nine children between the ages of three and ten years of age, during the months of September and October of this same year. These cases were fed on a modified Coleman diet receiving from 700 to 2500 calories a day, consisting of a diet of eggs, broth, lactose, custards and junket. All these children held their weight or gained during the course of the disease, except one child who died of a broncho-pneumonia. This was the first series of children with typhoid as far as I know, fed by this method up to that time.

During the past three years children with typhoid coming into the pediatric wards of Lane Hospital have been given a modification of the Coleman diet.

Before going into the practical feeding of these cases, I would like to review with you the question of food values and food requirements in health and disease. In order to maintain the body weight a certain amount of proteids, fats and carbohydrates must be given. If a sufficient quantity of the two latter are given, the body proteids will be protected and not used up in the heat production of the body. Thus in typhoid fever by giving a diet high in fat and carbohydrates and low in proteids, the weight can be maintained and even increased during the course of the disease.

No general rules can be laid down regarding the food requirements which shall apply to all persons, the needs for nourishment depending on many factors, the size of the body and extent of body surface being the most important considerations.

The average man in health requires between thirty and sixty calories per kilogram of weight to maintain health and strength, and according to Langworthy, a man under varying conditions of work requires the following:

Man without muscular work.....2450 C
Man with light muscular work.....2700 C
Man with moderate muscular work..3400 C
Man with very hard muscular work..5500 C

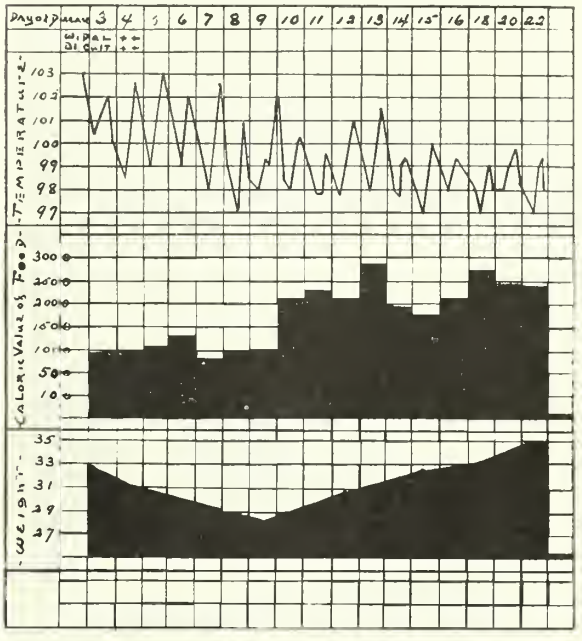

Chart C. C., 3d to 22d day. Uncomplicated case, moderately high caloric feeding. Gain in weight shown during fever stage. Dismissed on 23d day with a gain of 5 pounds in weight.

Atwater has shown that for every twenty calories developed and applied as work, eighty calories are lost in the body as heat and "internal work." Therefore in typhoid with a high fever the internal work is greatly increased, and more food than normal is needed and burned up. According to Coleman, the increase in total metabolism which occurs in typhoid fever creates a demand for more food than would be necessary to maintain the same individual in health, if he were confined to bed; the average increase during the course of the fever being about thirty-four per cent. But if the energy which the patients exert in moving about the bed is considered, ten per cent. more must be added to this, therefore five calories per kilo. must be given. If a patient's digestive organs are capable of handling this amount, the drain on his own tissues is less, his weight is maintained and his body is better able to cope with his severe bacterial infection.

If we refer back to the low caloric diets, taking

the milk and egg diet of Osler as an example, we find that his adult patients during the febrile stage were receiving less than 1000 calories per day, when they needed much more food at this time to maintain their body weight and strength.

Coleman feeds large quantities of lactate, cream and milk, giving as high as 5000 calories per day during the febrile stage.

In a large series of typhoid cases reported in 1915 by La Fetra and Schroeder they say that the loss of weight in typhoid as in starvation, and in other fevers, obeys the general law that the carbohydrate glycogen stored in the body is first utilized, and after this the fat and protein. A characteristic feature of the metabolism of prolonged high fever is the marked loss of body nitrogen. If enough food is given the nitrogen balance will be maintained and the body tissues will not suffer, thus the usual great loss in weight, lowered resistance to complications and relapses, and the toxic nervous symptoms will be eliminated.

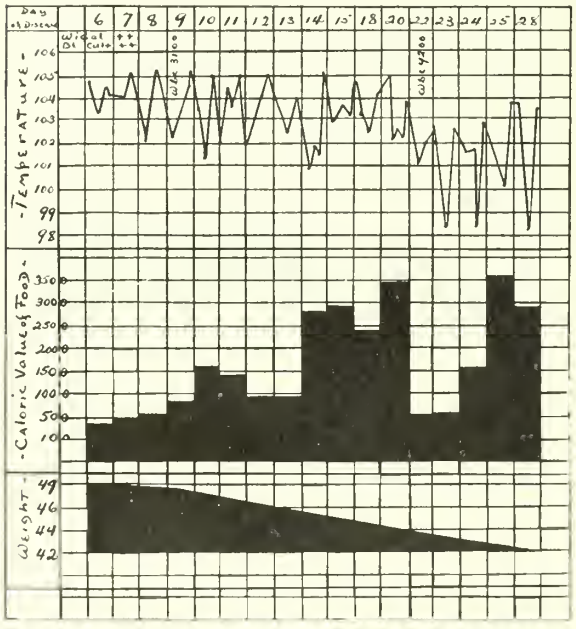

Chart of J. A., 6th to 28th day. Whey feeding 22d and 23d day for tympanites, high caloric feeding again 25th day. Disappearance of tympanites on 30th day. Dismissed on 50th day. Weight 50 pounds. Note high calory feeding during high fever stage.

The high carbohydrate diet is an ideal one for children, because large quantities of lactose can be given in most cases, especially when the fever begins to break and during convalescence.

In order to show the practical method of feeding in these cases, I will submit to you several charts, one of which, the case O. B., I will describe in detail.

This was a boy age 10, coming into the hospital in a very run-down condition in the beginning of his second week of typhoid. On admission his temperature was 104; he was delirious; white blood count 5200; Widal and blood culture positive. Up to this time he had been on a starvation diet and had lost considerable weight, his weight on admission being 50 pounds. On the fourth day the following diet was begun and given at regular intervals:

9 a. m.—Milk 4 ounces; barley water 2 ounces.... 80 C
12 m. —Milk 4 ounces; barley water 2 ounces.... 80 C
3 p. m.—Lemonade; (milk sugar 2 ounces).....240 C
6 p. m.—Milk 2 ounces; barley water 2 ounces.... 80 C
1 a. m.—Lemonade; (milk sugar 2 ounces).....240 C
5 a. m.—Milk 4 ounces; barley water 2 ounces.... 80 C
Number of calories in 24 hours.....880 C

In a few days when it was noted that the patient stood the above well, two ounces of milk in each feeding was added and another ounce of milk sugar added to each lemonade. Later the following articles were added:

Egg-nog 6 ounces (milk sugar one ounce).....270 C
Broth, clear..... 6 oz.
Ice-cream .....570 C
Custard .....270 C

The child left the hospital on the forty-fifth day after admission, getting over three thousand calories in twenty-four hours given as follows:

1 a. m.—Lemonade; (milk sugar 3 ounces).....360 C
5 a. m.—Milk 6 ounces; barley water 2 ounces...120 C
7 a. m.—Milk 6 ounces; barley water 2 ounces...120 C
9 a. m.—Custard .....270 C
12 m. —Ice-cream .....570 C
12 m. —Egg-nog .....320 C
1:30 p. m.—Milk 6 ounces; barley water 2 ounces...120 C
3 p. m.—Ice-cream .....570 C
4:30 p. m.—Milk 6 ounces; barley water 2 ounces...120 C
6 p. m.—Egg-nog; milk sugar 1 ounce.....320 C
10 p. m.—Milk 6 ounces; barley water 2 ounces...120 C

Total 3010 C

On the fourth day of admission with five hundred and twenty calories in twenty-four hours only about ten calories per pound were given. According to the history even less than this amount had been given before his admission to the hospital. By running the calories up rapidly, he was getting twenty-two plus, per pound at the end of the second week, forty at the end of the third week and sixty, calories per pound on dismissal from the hospital.

During his stay in the ward his weight had practically remained stationary with a gain of one pound on going home.

In my limited number of cases, covering possibly twenty typhoids in children, on this diet I have found the following to be true:

Two stages of the disease must be considered; first, the acute or high fever stage; secondly, the breaking temperature and convalescence stage. In the first stage in many cases, the food is not well taken, and a nitrogen balance cannot be maintained. In the second stage the calories can be increased rapidly and the normal weight and nitrogen balance maintained.

If the body is well nourished during the course of the disease, it is better able to fight the bacterial infection, and such complications as restlessness, continued high fever, tympanites, hemorrhages and perforation are prevented.

The patient is more comfortable and bright during the course of the disease, his condition is better and convalescence is shorter.

As far as the care of the patient is concerned, the time and energy given to tubbing, rubbing and applying ice coils is avoided, the nurse has a systematic way of giving food, and the food is easily prepared and the value recorded by any intelligent nurse.

I might say in closing that my object in reporting these cases is to show the practical application of a moderately high caloric diet, and compare it with other diets which I hope will be brought out by a discussion this evening.

CLINICAL OBSERVATIONS OF ONE HUNDRED CASES OF ARTIFICIAL PNEUMOTHORAX.*

By RALPH C. MATSON, M. D., Portland, Ore.

If the ever-increasing number of contributions on artificial pneumothorax may serve as a guide, it is evident that the method is constantly obtaining more adherents; but there is still a large field open to scientific study; many dark points to clear, and many difficult questions to solve, before pneumothorax therapy can celebrate its deserved triumph. While the method belongs to the most valuable in the treatment of pulmonary tuberculosis, there is no doubt that greater conservatism is being exercised, not only in the selection of cases, but in its application.

We employ the Forlanini-Saugman puncture method, using 1% novocaine as an anesthetic, introducing gas through a Soloman catheter. Since the communication of Tobieson of Copenhagen, we have used air instead of nitrogen-gas. The amount of gas and interval of repetition of injection must be individualized, using a Roentgenological, physical diagnostic and clinical control. Generally speaking, we favor small quantities of gas—200 or 300 c.c. every few days until a satisfactory collapse has been obtained, maintaining the same by using larger quantities at longer intervals. Following this plan there is undoubtedly less danger of activating a process on the other side, or getting an aspiration infection by forcing the contents of a cavity out too suddenly. By this method one also avoids the febrile reactions (not unlike a tuberculin reaction), which frequently follow large inflations. These reactions are probably due to toxins pressed out of the infected lung and swept into the blood-stream; on the other hand, it is not desirable to make more punctures than necessary, and in certain selected cases, especially for hemorrhage, the pneumothorax may be rapidly established.

During the early inflations we work with low pressures—neutral or weak positive; in fact, the lowest capable of attaining a satisfactory compression. Later, after some pleural thickening has taken place, it is necessary to work with higher pressure.

Duration of treatment should extend from six months to two or more years, except in cases of hemoptysis (tuberculosis congestiva), where treatment may be left off sooner. However, it is difficult to say when the tuberculous foci in the lung are cicatrized, even though the patient is clinically well.

Artificial pneumothorax is a method that cannot be generalized, but is limited in its employment. Not all physicians are in a position to employ it, as by incorrect application, injury can come about. One must not only understand artificial pneumothorax, which varies with the individual, but one must understand tuberculosis from a pathological, clinical and Roentgenological standpoint. Success, aside from an intelligent patient, requires a careful selection of cases, constant observation of lung changes, absolute knowledge of the size and shape of the pneumothorax cavity, and position of mediastinal contents. This information may be obtained by clinical observation and physical examination; but for every mechanical therapy of lung tuberculosis, exact, repeated, systematic observation under the x-ray with the screen and plate, is an unconditional requisite. The x-ray not only enables us to select suitable cases by establishing indications and contra-indications, but permits one to graphically follow the anatomical distribution of the lesions, their character, the degree of compression, etc., and thus safeguard the other side.

In the selection of cases the x-ray plays a very important role; in cases with extensive, destructive changes on the one side, producing marked auscultatory phenomona, it is exceedingly difficult to pass judgment upon the integrity of the opposite side, especially behind, where rales are often transmitted to the opposite side with such intensity that refined tones upon the good side cannot be heard. Even in 1856 Feuger called attention to the echo of bronchial breathing from the diseased to the healthy side. Since then, Budde and others have called attention to the conduction phenomenon of rales. At times one is astounded at the amount of disease shown upon the plate; cases that from a physical diagnostic standpoint have been considered one-sided, are frequently seen to have extensive disease upon the opposite side, especially when a bronchogenic infection of a central portion of the lung has taken place (Chart I). The x-ray reveals the character and extent of this type of infection with a degree of certainty not otherwise attainable.

Furthermore, in cases with severe acute infiltrating disease upon one side and compensatory changes upon the other, the respiratory sounds are so altered that it is difficult to determine the extent of the disease.

Hemorrhage cases are often puzzling; a small rigid wall cavity may be a source of much annoyance and continue to bleed on account of lack of compression. The x-ray clears up the difficulty; by its use one also avoids the not uncommon mistake of trying to compress a supposed cavity, which proves upon the plate to be a deviated trachea.

From a Roentgenological standpoint, circumscribed hilus tuberculosis, characterized by round and oval uniform spots; hilus-apex tuberculosis with isolated areas in the apex; increased peribronchial or perivascular paths; also somewhat more extensive disease with scattered areas in apex and upper lobe but isolated in lower lobe, do not contra-indicate the compression of the other side. However, if we find in the upper lobe confluent patches amounting to consolidation, broncho-pneumonic or destructive processes, compression is contra-indicated.

Needless to say, the x-ray findings must be interpreted with great caution and only by one thoroughly familiar with pathology of tubercu-

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losis. The interpretation must be done by the clinician himself. One cannot differentiate active from inactive tuberculosis by means of the x-ray alone. Great caution must be exercised in diagnosing cavities from the plate alone. Bands of adhesions circularly arranged so frequently resemble cavities that even an expert will make mistakes if his work is not controlled by the physical examination and clinical history.

The indications for an artificial pneumothorax vary within the widest limits, and every individual case represents a problem for the physician to solve on the basis of his experience in the usual and pneumothorax therapy. Early infiltration cases should be withheld for the present as they usually recover by other methods; and in some cases the lung shows little tendency to expand after prolonged compression, on account of the tremendously thickened pleura. Furthermore, compression does not absolutely prevent extension of the disease into the compressed part. Therefore, in a given case, if an early one, we must consider the probability of recovery by the usual therapy; or whether it is better to possibly sacrifice the uninvolved lobe on the affected side to the method and save the other side, and perhaps the individual's life; especially if the case is severe enough, and the result of the usual therapy, after a reasonable trial, is in doubt.

The best results will be achieved in the chronic forms, preferably during the period of infiltration, with destructive lesions scarcely initiated (or at least, just installed), adhesion-free and positively unilateral. This cannot be too often emphasized. One sees splendid results in cavity cases if the cavities are not extensive or superficial; in the latter case not only is there great danger of rupture of lung tissue under compression, but adhesions are frequently present over superficial cavities, preventing a satisfactory collapse. In cavity cases, the sooner an artificial pneumothorax is instituted, the better. Not only is the danger of intestinal infection diminished, but the possibility of bronchogenic extension on the same, and to the opposite, side is lessened. To use the method when compelled to, invites disaster; the danger of delay far exceeds those associated with the procedure or damage to the lung. We believe that Forlanini is correct in advocating the method when excavation begins.

In severe hemoptysis, artificial pneumothorax is strictly obligatory; not only does it put a quick end to bleeding in the absence of adhesions, but it lessens the danger of aspiration pneumonia or aspiration tuberculosis.

That pneumothorax cannot do harm if it does no good. is certainly not in accordance with our experience. Cases with an old extensive, fibrocaseous disease on one side and acute infiltration on the other are at times misleading; acute infiltration or inflammatory processes on the noncompressed side of bilateral cases are very likely to be made worse. Not too severe changes (probably limited to infiltration) in the good side, seem to be favorably influenced by pneumothorax; but, according to our experience, the more severe are only occasionally lastingly improved; lesions limited to the apex or extending from the hilus outward appear most favorably influenced. Lesions of the base of the uncompressed side are likely to be made worse; it is in this class of cases that the x-ray again renders such splendid service. In bilateral cases one obtains prolonged relief of symptoms—rarely cures; the end results are always doubtful. If bilateral cases are contemplated it is foolish to wait for the patient to get in better condition; possibility of benefit from compression may be lost. Whether a case of this character will be improved or harmed cannot be foretold. But, if bilateral cases are done, the disease on the good side must be limited to the upper lobe and must not be acute; it must be carefully watched and the collapse cautiously brought about.

As a matter of fact, one should not aim to collapse the lung in this class of cases; a layer of gas between the visceral and parietal pleura is sufficient to interrupt the circulation of lymph, causing local toxin absorption.

Actively advancing and caseous-pneumonic forms appear unsuited; in the latter, for anatomic reasons, no effectual collapse can be hoped for. Forlanini warns us against it in these forms and reminds us that it is frequently bilateral and should not be used except as an extreme measure, and then very cautiously. Bilateral cases with softening on the less affected side, or infiltration in the lower lobe without softening, are likely to be made worse. Isolated lower-lobe tuberculosis, on account of the accompanying bronchiectasis and difficulty of collapse, appear not adapted. Cases with a rapid course and severe toxemia do not do well; not only theoretically can little be expected, but in practice this is confirmed. Long standing cases of fibroid tuberculosis with cavity formation are not so satisfactory as one would be led to believe; not because of the method, however, but on account of the likelihood of adhesions which prevent satisfactory collapse. This type of tuberculosis represents the most difficult cases to obtain a clinically effective degree of compression. Success cannot be expected without resort to appropriate surgical procedures, which, as yet, have not had wide application. Forlanini and Fagioli have reported success in desolate bilateral cases compressing both sides. We have had occasion to resort to this in four cases, with one complete success.

Unfortunately, many cases exhibiting indications for an artificial pneumothorax cannot be compressed on account of pleural adhesions; it would be splendid to have a method that would enable us to recognize free pleural space from one partially or wholly obliterated with adhesions, but there is no absolute criterion that permits a differentiation in every case, between the normal and pathological pleura; the value of the x-ray for this purpose has been exaggerated; the excursion of the diaphragm even under fluoroscopic screen permits no conclusions; for in cases of diffuse lung changes with involvement of the lung-border, the

phrenico-costal sinus may appear obliterated and lung excursion fail through border adhesions, yet offer no real obstacle to gas entry. On the other hand, in cases with high lateral adhesions, little interference with diaphragm movement or lung-border excursion takes places. X-ray plates may be clear, yet collapse found impossible.

Physical examination undoubtedly gives more reliable information than the x-ray regarding the presence or absence of adhesions. Generally speaking, the greater the mobility of the lung-border, the greater the probability of free pleura. Important hints of existing adhesions are marked weakening of the breathing over the lower lobe; local shortening of the inspiration ,Jacquerod's sign); presence of the "dissociation symptom" of Kuthy—that is, where the pectoral fermitus is weakened with increased bronchophony over the same dulled area; and the demonstration of diminished lung excursion by percussion; however, no case should be selected upon the data gathered from the physical examination alone, for one is occasionally agreeably surprised in establishing a perfect pneumothorax in a clinically adherent case.

For an intimate knowledge of the mechanical condition occurring in the thorax after having introduced gas, we find clinical physical diagnostic methods of little service in determining the size and character of the pneumothorax. Especially is this true of the small, flat variety, since neither tympany nor weak breathing can be demonstrated. With a large pneumothorax and strongly compressed lung, the breathing is distinctly weak or absent; rales are very faint and distant, if at all present. In case adhesions prevent certain lung portions being entirely cut off from breathing, one hears through the gas distinct breathing of a peculiar, ringing quality, similar to amphoric breathing. Rales, if present, have a characteristic metallic sound. By percussion one obtains in total and large pneumothorax, tympany over the whole thorax; also often over the non-compressed side, due to the compensatory changes; so that one can be in doubt as to which side has been compressed. Of course, here the breathing shows clearly; one hears over the non-compressed lung, intense, sharpened vesicular breathing. Physical signs may indicate complete compression, but the x-ray will show many cases uncompressed. So many interesting and important phenomena are shown by the x-ray that are not capable of recognition by any other method, that it is an absolute necessity.

Rubino has pointed out the importance of noting the diaphragm tonus. This muscle suffers in the wasting process in tuberculosis, as do other muscles, particularly the chest muscles; in women especially can this be observed. Diminished diaphragm tonus permits the diaphragm to be pushed downward as gas is introduced, increasing the intra-abdominal pressure. Many patients, especially in the beginning of treatment, complain of fullness of the stomach, loss of appetite due to downward pressure upon the stomach in left-sided cases; in other cases one observes nausea from downward pressure upon the liver; also loss in weight, insomnia and extreme nervousness. This mal-position of the diaphragm is only recognizable radioscopically. Brauer designates this symptom complex "vagus dyspepsia" and attributes it to vagus pressure. The condition is relieved by reducing the intrathoracic pressure.

The position of the heart and mediastinum is important. In general we observe that in cases free of pleural adhesions, the mediastinum bulges only after the lung is fully compressed; but at times one observes great mediastinal displacement after comparatively slight intra-pulmonary pressure, especially if adhesions are present. At times this displacement appears so great as to make one very anxious; yet the patient complains of little. Nitsch in the Brauer clinic, upon the basis of anatomical studies, has pointed out two weak places in the mediastinum; first, in the anterior mediastinum between the second and fourth rib; second, in the posterior mediastinum in its lower part, between the spine and aorta behind, and the oesophagus in front. The former, the weaker of the two, often forms an actual mediastinal hernia. These mediastinal hernia are clearly seen as half-moon-shaped gas areas, bulging toward the uncompressed side; too great pressure not only may defeat the object of compression by bringing too much pressure upon the other lung, but rupture at Nitsch's point may occur. The manometer is not a reliable guide to avoid these accidents, since low-pressure readings may occur with weak mediastinal pleura. The x-ray shows clearly the position, not only of the mediastinum, but also the trachea, heart and blood-vessels. In the absence of an x-ray it is a mistake to compress until no rales are heard, for one often hears large, metallic rales, due to the movement of mucous in the large bronchi taking on metallic quality by resonance in the pneumothorax cavity.

While the x-ray is of such great value in the selection of cases and in familiarizing us with the size and character of the pneumothorax, we must rely chiefly upon the stethoscope to detect early damage to the opposite side. A careful watch and record of the good side must be kept. After the first few inflations, when the diseased lung has been placed somewhat at rest, one notices very often a marked reduction of rales in the good lung as a consequence of a diminution of the resonance phenomena. One should orientate himself regarding the character, quantity and extensiveness of rales on the good side, if present, and their topographic location. Weekly examinations and a careful record will tell whether they increase. In many favorably progressing cases, as a matter of fact, they become less. In case they appear over a wide area, one must either diminish the compression or leave off altogether.

The benefit derived from a pneumothorax in our cases has been almost in direct proportion to the size of the pneumothorax. In chiefly unilateral cases free of adhesions, and which are otherwise suitable, one obtains arrest and healing of the pathological process. When the mechanical action of the gas is prevented through adhesions and in bilateral cases, one may obtain symptomatic results.

Adhesions between lung and diaphragm are the

most harmless. Apical adhesions are serious; but the most serious were those attached to the lateral aspects of the chest-wall. In selected cases the energetic use of gas under pressure will separate recent adhesions; 20 to 30 c.c. H2 O should be the average limit, although a much higher pressure may be used in some cases. We have used as high as —80 H2 O with success in two cases, where we re-established a pneumothorax that was becoming obliterated by secondary pleural thickening. However, high pressures with a complete pneumothorax are dangerous; cases must be carefully studied with the x-ray before resorting to high pressures, avoiding, if possible, old and extensive tuberculosis where cavities and caseous areas in the cortex are always present, representing the source of one of the most frequent and serious complications of the treatment; namely, lung-perforation. Gas embolism, hydrothorax and pleural eclampsia are also dangers to be considered in forcibly separating adhesions. Adbesions should be given plenty of time to thin out; one must not attempt rapid stretching; if they are band-like, the Jacobeus endopleural operation with cautery through a thorocoscope would seem to be an ideal procedure.

The operator must be thoroughly informed, not only in the indications but in the accidents and the means of preventing them. Since the experiments of von Muralts on intra-thoracic pressure values, the observation of the manometer has become of greatest importance, not only to safeguard the heart and other lung, but the life of the individual. Let it be an absolute rule not to introduce gas before you are convinced the needle is in free pleural space, or before a well-defined manometer reading swinging more than 1 c.c. H2 O and registering on primary punctures negative pressures. Failure to observe this rule may give one a painful experience, never to be forgotten, and endanger the patient's life. A merely swinging manometer does not indicate free pleural space, and if still in doubt, it is advisable to use the "Holmgren procedure." The manometer tells the position of the needle; if it has entered a bronchus or cavity (air containing lung tissue), and superficial quiet breathing occurs with open glottis, the manometer shows an excursion above and below the neutral point, usually a +1 —1. By deep breathing the variations may be 2 c.c., but never beyond. Furthermore, one will observe (the patient breathing slowly) that the —2 occurring during inspiration, falls to neutral before the expiration begins; and the +2 exists only with the beginning of expiration and falls to neutral before the inspiration begins. If the patient holds the breath with glottis open, either at inspiration or expiration, the + or — sinks to neutral. The explanation, of course, is simple, for pressure variations in air containing lung tissue when the glottis is open, exist only during respiratory movement. Furthermore, should gas be admitted, it enters with suspicious rapidity and the patient feels no signs of pressure.

Negative pressure readings with slightly moving manometer are also present in case the needle enters a cavity with obstructed opening. Gas entry can cause gas-embolism by tearing a small vein. Should the needle enter a lung vein, it is said the manometer registers a negative pressure, which is increased by deep breathing. In case a pulmonary artery is entered, the pressure is — and almost stationary, but cardiac readings will be noted. If the needle be in solid tissue, the manometer registers neutral and no movement takes place. If the needle be in the pleural cavity, the manometer at once shows two characteristics: first, movement essentially greater than above mentioned; second, it maintains itself at the end of the respiratory phase and does not sink back to neutral, the pressure being invariably negative in primary punctures,—5 to 10 c.c.; generally speaking, the larger the thorax, the greater the negative pressure. A reverse curve—one that is + on inspiration and — on expiration—occurs in pneumothorax only in "paradox diaphragm movement"; however, the latter does not always produce reverse pressure values. The "paradox diaphragm movement" can occur from too great pressure in the pleural cavity.

The manometer also gives accurate information regarding the presence or absence of adhesions. In case the pressure gradually increases as gas is let in, and no pain complained of, it speaks for the absence of adhesions. On the other hand, if the pressure becomes high after the introduction of relatively small quantities of gas, it indicates adhesions and the patient complains of much pain, often referred to the shoulder or stomach—more frequently to the former.

Complications. Aside from an occasional mild subcutaneous emphysema, the most frequent complication was hydrothorax; this occurred eight times. Generally speaking, it has been our policy to let it alone, provided it caused the patient no inconvenience and maintained compression. Frequent aspirations should be avoided. It is not within the scope of this paper to discuss the etiology of hydrothorax complicating pneumothorax; however, our effusion cases divide themselves into two groups; group one comprising four cases where, on account of adhesions, it was necessary to work with somewhat high pressures, and tearing adhesions could easily be ascribed as a cause; in one case the fluid appeared after the sixth month, ushered in with fever; it remained two months and absorbed, during the patient's absence from supervision, leaving the lung partially adherent and tremendously thickened. A pressure of 80 c.c. H2 O was necessary to re-establish the pneumothorax. Marked retractive processes, followed by diffuse pleural thickening and diminution of the pneumothorax cavity as a consequence of connective tissue proliferation, occurred in this case. The cavity has been dry now for two years. The other three cases of this group occurred early, accompanied by fever at onset, and were treated by aspiration; in one the fluid has disappeared; in the other two it is still present. Group two comprises four cases, wherein the effusion was probably due to the extension of a cortical tuberculosis through the pleura. In one case it appeared after the third month, without fever. The patient was compelled to remove to a distant place where competent medical super-

CHART I.

GENERAL SUMMARY OF ALL CASES.

CLASS OF CASES	No. of Cases	Bilateral	NUMBER with COMPLICATIONS	RESULTS OF TREATMENT: Satisfactory Collapse	Partial Collapse	No free pleural space	Clinically well	Arrested Ambulant	Favorably influenced	Temporarily Improved—Abandoned	Unimproved	Made worse	Still under	Dead	COMPLICATIONS UNDER TREATMENT: Gas Embolism	Pleural shock	Sterile Exudate	Sterile Empyema	Empyema T. B. demonstrated	Empyema due to pus bacteria	Lung perforation	Hemoptysis compressed side	Extension of disease other side	Secondary pleural adhesions	Pleurisy with effusion opposite side.
Severe acute infiltrating and caseous pneumonic forms	20	15	2 larynx 1 bowel	15	4	1	1	3	3	2	8		9	7	0	0	1	1	1		1				2
Chiefly unilateral, destructive, fibrocaseous, extensive and progressive	19	2	3 bowel 1 larynx	13	5	1	6	4		6	2		6	4	0	1	5	1			1	2		2	
Chiefly unilateral, fibrocaseous, cavernous, cavity manifestation in foreground	16	1	1 bowel	3	5	8	1		2	3	10		3	4	1										
Severe and repeated Hemoptysis	6	2	1 sarcoma of testicle	4	2	0	1	1	2				1	3											
Tuberculous Pleurisy with effusion	8	0	1 tuberculous meningitis	7	1	0	7							1											
Non-tuberculous lung disease: 1 post pneumonic empyema				1			1																		
2 abscess				1		1	1				1														
3 bronchiectasis				1	1	1			1		3					1				1					
1 gangrene				1						1				1											
3 diagnostic				3																					
Total	10													3											
Bilateral Fibrocaseous cavernous	12	12	2 larynx 4 bowel	10	2	0	0	1	1	6	1	2	2	8			2				1		2		
Ultimatum refugium Desolate Bilateral Cases.	9	9	4 larynx 2 bowel	7	1	1	0	0	0	3	5	1	0	8									1		
TOTAL and %	100	41	11 bowel 9 larynx	66	21	13	18	9	9	21	29	3	21	39	1	2	8	2	1	1	3	2	3	2	2

vision was not available; his improvement was constant; he returned for examination two and a half years later, believing himself well, as he had no subjective signs of tuberculosis; he complained only of dyspnea on exertion, which he attributed to adhesions, as he had not felt fluid for more than one and a half years, and presumed it had absorbed and the lung re-expanded. Examination showed the heart to the right of the sternum and the left pleural cavity filled with a sterile, chylous exudate containing debris, fat and cholesterin crystals; the pleura was not markedly thickened. The fluid has been withdrawn and the lung has re-expanded.

A second case of this group formed fluid after the fourth month; the patient's general condition was made worse. Two cases became purulent and later got a lung perforation.

Pyothorax occurred seven times; three were sterile, two causing neither fever nor constitutional disturbance; one was due to infection with pus bacteria; all were treated with aspiration with gas insufflation.

Three were due to lung perforation. One was referred to the surgeon and died while a rib resection was being done. Two were drained under local anesthesia; one got an arrestment and is ambulant with a tube in place, more than one year. The other case succumbed to an aspiration tuberculosis on the opposite side.

Pyothorax in our cases, except one (pyothorax occurring in a bronchiectasis case after an acute tracheo-bronchitis), was probably due to the perforation of some cortical caseous focus. Aspiration followed by irrigation of the pleural cavity with 1-5000 potassium permanganate solution or .5 Na, Cl. Sol. and gas insufflation has proven effectual; hence greatest care must be exercised not to work with high pressures on account of the danger of lung perforation, which has a gloomy outlook. After pleural thickening has taken place, little febrile disturbance is seen, due, no doubt, to the absence of toxin absorption. A very unpleasant complication, or what might more properly be designated sequela, which frequently renders further pneumothorax treatment impossible, consists in the formation of secondary pleura thickening and adhesions. We have had two cases in which the pneumothorax cavity became gradually obliterated in spite of high pressures and frequent inflations. The cause is no doubt due to the irritation of the pleura.

Air embolism occurred once early in our work; the patient was unconscious 25 minutes with a hemiplegia; full recovery took place within one hour.

Pleural eclampsia occurred twice, in both instances on reinflations of nervous, apprehensive women (one six months pregnant); both were adhesion cases and in both instances it came on after the needle had been withdrawn—one immediately after and the other ten minutes after. Both cases were characterized by the typical symptom complex. Psychic symptoms, numbness, loss of consciousness, mental confusion, tonic contractions on the pneumothorax side, no loss of bladder or bowel control, no vomiting, rapid pulse, weak and irregular; pale skin with cyanotic spots, especially on face, throat and chest; breathing superficial and irregular. The attacks lasted one-half hour. Recovery without complications took place in both instances; one case (after a preliminary morphin-atropin injection) has since been reinflated several times without event, using warmed nitrogen gas.

Recrudescence in the uncollapsed side that could be justly attributed to the pneumothorax, occurred three times; in two cases withdrawal of the gas caused its subsidence; the other was progressive.

Pleurisy with effusion on the opposite side has occurred three times; two were bilateral cases with a moderately active lung lesion on both sides, complicating a pleurisy with effusion; aspiration of fluid and replacing it with gas brought immediate improvement; and while under compression, the opposite side became active with exudate formation, which was also aspirated and replaced with gas, establishing a double pneumothorax. One case was progressive; autopsy showed tuberculous laryngitis, tuberculous pericarditis and tuberculous enteritis; there was no active lung tuberculosis. The other case was under treatment with a double pneumothorax one year; both sides have since re-expanded; the patient is arrested and able to work.

Critical study of our cases reveals that failures to induce a clinical cure have been due to the independent evolution of pre-existing lesions in the other lung or elsewhere, or to pleural adhesions, preventing a satisfactory collapse.

AIMS OF NATIONAL FOOD ADMINISTRATION.

The primary aim is to see that the people of this country eat a sufficient quantity of food, but not an excess, and that they stop waste. It is also to reduce the consumption of staples so that a large amount may be set free for export to the allies.

We wish to urge in particular the free use of vegetables and perishable foods where they are produced, to encourage the preservation of perishable and semi-perishable fruits, vegetables and other foods, to substitute other cereals to a large extent for wheat, and to reduce materially the consumption of meat.

Many other phases of the work will be developed from time to time, and reported regularly to the councils of defense.—Herbert Hoover.

We, the public officers of this country, must overcome the inertia of this habit in the community and offset the momentum of great industries by teaching the consumer and the producer of alcoholic beverages to discontinue their mutual conspiracy, which is robbing the future generations of their birthright of health.—Haven Emerson, M. D., Amer. Jour. Pub. Health, June, 1917.

TUBERCULOSIS IN CHILDHOOD WITH UNUSUAL MANIFESTATIONS.

By LANGLEY PORTER, M. D., San Francisco.

The subject assigned to the speaker, tuberculosis in childhood, is obviously too extensive to be discussed in twenty minutes. It would be hopeless even to attempt a review of the literature on any subdivision of this subject, for volumes have been written on the etiology, the symptomatology, the prophylaxis, the treatment and a hundred and one of the important side issues that appeal to those who make a study of the subject.

In going over the last eight years' records of children who have been treated for tuberculosis at the Stanford University Medical Clinic, I have encountered a number of histories which record unusual findings and it seemed to me that the section might be interested in the report of the more remarkable of these. I have therefore determined to present four of these histories in some detail.

The first of these and one of the most unusual cases of tuberculosis of the peritoneum we have encountered, was that of A. B., age 13 months. This child was admitted to the children's ward of the Lane Hospital on February 28th, 1916. He was a well grown, emaciated child of 13 months, weight 25 lbs. He had only four teeth. The physical examination, except for the abdomen, was negative. It is recorded that the abdomen was rigid, somewhat distended, tender to palpation and rigid, so that nothing could be made out by palpation without an anesthetic. Under an anesthetic there was felt a curious crepitation which seemed to rise from the small intestine that had been pushed forward and was supported by an indistinct mass or masses in the abdominal cavity. The liver and spleen seemed normal. There was no evidence of inflammation in the right iliac fossa. The right testicle was indurated, hard and apparently not tender. The right spermatic cord was in the same condition, about as large as a goose quill. The child lay with the knees bent and the thighs flexed on the body; extension of the legs apparently gave pain.

On examination under an anesthetic, the child vomited at least 1½ pints of fluid, which was largely bile, with some curdled milk. The stomach was washed and a further large quantity of bile stained fluid was withdrawn.

The family history was unimportant. The personal history revealed nothing except that for a long time the child had been unwilling to lie on its back with its legs extended. He had been perfectly well on January 22nd, while on the 23rd, on waking, he had an attack, which, as described by his parents, must have been a chill which was followed by cyanosis and coldness of the extremities for about three hours before fever supervened. The child showed an increase of white blood corpuscles to the number of 18,500 and 63% of these were polymorphonuclear. The urine showed a moderate number of finely granular and hyalin casts. The stool examination gave no evidence of any disturbance in the digestive tract. Lumbar puncture was done; there was no apparent increase of pressure, although this was not measured. Total cells in the fluid were 11 per ccm. Nonne and Noguchi tests were negative. Sugar reduction was positive. X-ray examination showed the abdomen distended with gas; the bismuth began to leave the stomach in one hour; and the end of 24 hours there was considerable bismuth still present in the stomach. The remainder was irregularly scattered throughout the bowel which showed a marked delay in the emptying of the stomach and irregular passage of bismuth through the bowel. The child died on March 6th.

Autopsy showed a very well developed, much emaciated male child of about a year of age. Pupils slightly dilated, equal. Skin and visible mucous membranes were pale. No enlargement of superficial lymph glands. Abdomen was markedly distended, slight edema of feet and lower legs. The right testicle was about four times normal size, freely movable in the scrotum. Marked congestion of the back—almost a complete atrophy of subcutaneous fatty tissues—muscle was poorly developed. The peritoneal cavity was entirely obliterated by easily broken adhesions. The small intestines were covered with a layer of fibrous exudate which completely enclosed them. Loops of the small bowel were bound together by fairly firm fibrous adhesions. On the fibrinous exudate between the folds of the mesentery were many fine grayish nodules. The appendix was rather short, bound down in the mass which surrounded the caecum, otherwise normal. The mesenteric lymph nodes were enlarged; largest 2 cm. in diameter, filled with many just visible grayish white nodules. The retroperitoneal lymph nodes were apparently not enlarged, stomach bound down to diaphragm by adhesions which also surrounded the liver and spleen. The spleen was of normal size, external surface covered with a layer of fibrin, cur surface showed a fairly firm pulp, apparently normal. The right spermatic cord was thickened. The testicle was normal; in upper part of epididymis were several just visible grayish nodules. Similar grayish nodules were seen along the course of the spermatic cord. The left adrenal was normal. The right kidney was somewhat swollen, external surface was smooth, cut surface showed some widening of the cortex, markings were apparently normal. The left kidney was the same as the right, somewhat paler. The bladder and rectum were normal. The duodenum contained bile-stained contents. The bile duct was patent. The stomach was not dilated; it contained bile-stained mucus. Mucous membrane apparently normal. The abdominal aorta was normal. The liver was covered with a layer of yellowish fibrin. The cut surface was of a bright yellow color; centers of lobules stood out as reddish areas. The right lung showed a diffuse emphysema in anterior, middle and lower lobe. In the lower lobe there were large areas of collapse. Scattered throughout the lungs and on pleural surface were many grayish nodules with an oval hemorrhagic area around them. Peribronchial glands normal. The left lung same as right. Nodules may be squeezed out and were quite discrete. The heart was of normal size;

valves and muscle normal. The thymus was not enlarged.

Diagnosis: Tuberculosis of the peritoneum. Tuberculosis of the mesenteric lymph glands.

Smears of peritoneum stained with Gram method showed many lymphocytes and large endothelial cells, few polymorphs, no bacteria. Smears of peritoneum stained with acid fuchsin showed many acid fast granular bacilli, the greater part of which were contained in the cells.

Smears of the lung: Gram method showed polymorphs in moderate number, lymphocytes and a moderate number of Gram positive diplococci. Acid fuchsin stain showed a large number of acid fast granular bacilli.

Peritoneum: Marked cellular thickening in which there were numerous large caseous areas surrounded by epithelial cells. Few small cellular nodules.

Lung: Few recent tubercles.

Heart muscle: Normal.

Liver: Extreme fatty infiltration, many small cellular tubercles.

Peritoneum: Covered with partly organized fibrin. Some tubercles in granulation tissue.

Stomach: Normal, except for tuberculosis of peritoneum.

Lymph gland: Marked catarrh in lymph spaces. Several recent tuberculous areas and beginning caseation.

Spleen: Marked passive congestion. A few caseous spots. Capsule showed adhesions in which were numerous caseous areas and tubercles.

Kidneys: Normal.

This case is of interest chiefly because it illustrates how extremely acute a case of tuberculosis of the peritoneum may be and how difficult the diagnosis may be made. The rigidity of the abdomen led to the belief that there were deep masses of retroperitoneal sarcoma present. The acute onset and rapid course coupled with extreme infiltration of the testicle and cord further confused the diagnosis. The character of the urinary findings was unexpected in a case of tuberculosis of the peritoneum and the blood picture was such as to force the consideration of some other infection than tuberculosis.

Another odd and unusual case was that of J. T., who was sent to the Lane Hospital by Dr. C. S. Rodgers, of Watsonville, Calif. The boy was suffering from extreme enlargement of the glands of the neck. To such a degree were these glands enlarged, that the superficial clinical picture was that of Hodgkin's disease. Summary of his physical examination, made at the time of his admission, states that he was a well nourished Italian boy, 12 years of age, whose physical abnormalities consisted only of marked enlargement of the preauricular anterior and posterior cervical glands and lesser enlargements of the axillary and inguinal glands. He had some opacities of the cornea and was unable to speak above a whisper. The diagnosis of Hodgkin's disease and interstitial keratitis was made. His chest revealed no evidence of tubercular involvement. In the blood picture the red cells were entirely normal, both quantitatively and qualitatively. W. B. C. 8350, Polys. 66%, lymphocites 26%, large monos and esinophiles each 3%. A gland was removed from the posterior cervical triangle. This was about the size and shape of a large almond, pinkish gray in color, fairly soft in consistency. It cut easily and cut surface was smooth and gray in color with numerous small yellowish areas scattered throughout, but no areas of definite caseation. Under the microscope there was diffuse proliferation of lymphoid and endothelial cells. The lymphoid follicles had entirely disappeared. Scattered throughout the sections were many well defined tubercles with giant cells. Some of these showed beginning caseation. There was a moderate increase in the connective tissue of the stroma.

Following this report an extensive dissecting operation was done and about 50 glands were removed; these varied in size from a hen's egg to a small marble. The report of the pathological findings duplicated those just read and it was obvious that the child was not suffering from Hodgkin's disease, but from a tuberculous lymphangitis.

A more characteristic case of tubercular peritonitis is that of K. L., age 3 years. Complaint on entrance was constipation, vomiting and abdominal pain and flatulence. Family history was unimportant. Patient's previous history was one of difficulty in feeding, although she weighed 26 lbs. at 1 year and although she erupted her teeth, walked and talked at the normal time. She had mumps and chicken pox. Nine months before her entrance it was noticed she was severely constipated and had marked abdominal distention, which gradually became worse. For two months constipation had been extreme, she had vomited very frequently and complaint of pain in the belly. Pain was sometimes complained of just before urination. On some days vomiting was so extreme that no food was retained. The blood picture was W. B. C. 6450, of which 58% were polymorphonuclear. Wassermann was negative on two occasions. Nothing abnormal in the urine, and the stool showed that both fats and ordinary starches were well digested. An X-ray taken after bismuth enema discovered what was apparently an annular constriction in the sigmoid. A plate taken after a bismuth meal apparently confirmed this finding. Dr. Stillman operated on the child, making a median incision in the lower part of the interval between the rectus muscles. This revealed: Peritoneum adhered to mass underneath and by easily broken adhesions to underlying intestines. A large solid caseous mass was found in the parietal peritoneum extending across the abdomen. The upper edge at the level of the umbilicus—hard and sharp. This mass was about two inches wide and half an inch deep. The visceral peritoneum was red, sticky and covered with small tubercles, the loops of the intestine all being matted together.

The retroperitoneal and mesenteric lymph nodes were all large and hard. There was a large hard mass in the region of the sigmoid.

For some time after the operation she seemed to be relieved and a month later was allowed to go home, but immediately returned to the hospital because of vomiting and constipation with very marked distention of the upper bowel. This time a reversed peristaltic wave was seen over the upper abdomen, which disappeared after vomiting. She did not gain weight, but looked pretty well, then became apathetic and the symptoms continued. The child went progressively from bad to worse. An obstinate constipation alternate with diarrhoea then set in. Then almost complete obstruction of the bowel supervened and when the child seemed to be on the point of death, she developed a purpura and a fecal fistula. From this time on her condition improved rapidly and she was dismissed from the hospital three months after the first operation in apparently good and improving physical condition. Since her dismissal she has continued to improve and gain strength and weight. I am indebted to Dr. Herbert Yerington for a report of this case.

In a large proportion of our very young babies who have succumbed to tuberculosis, the initial lesion is that of the middle ear.

In eight years, we have had some 20 children under 2 years die of tuberculous infection; the following is the youngest among them:

B. B., a male child, age 2½ months, born at full term on January 17, 1913, never seemed to thrive. Wassermann was negative. On the left side there was a facial paralysis and also swollen glands on that side of the neck. The child died on March 31st, when 2½ months of age. Diagnosis of tuberculosis of the middle ear had been made. Autopsy revealed a very poorly nourished infant, 38½ cm. long, in very much emaciated condition. The legs showed a slight edema, the skin and visible mucous membranes were pale. There was a marked enlargement of the lymph glands on the left side of the neck, also marked enlargement on the right side. The subcutaneous fatty tissue showed complete atrophy and muscles were poorly developed. The position of the abdominal viscera was normal; thymus gland was quite small, measuring only 2½ x 2 x ½ cm. The heart was small, but otherwise normal. There were no tuberculous glands in the posterior mediastinum on the left side, although the left visceral pleura and left lung were found to be studded with innumerable small grayish white tubercles. The bronchial tubes were normal but a few apparently recent tubercles were found in the peribronchial lymph nodes. In the anterior part of the upper lobe, the tubercles are somewhat larger. The center of one of the groups contained a small hemorrhagic focus, 3 x 2 mm. The lung, bronchi and peribronchial lymph nodes on the right side were similar to those on the left. At the right apex there were two somewhat larger areas of red consolidation with numerous tubercles about 5 mm. in diameter. The spleen was enlarged, 5½ x 3 x 2 cm. and contained several large tubercles, the largest about 3 mm. in diameter, numerous small ones also being present. Both kidneys were small and showed some cyanotic spots. The cortices contained a number of small tubercles. There were no enlarged glands in the retroperitoneal region. The mesenteric lymph glands showed slight enlargement, but no visible tuberculosis. One of the Peyer's patches showed a yellow spot surrounded by a hyperaemic area. A lymph node with a large area of caseation was found at the hilus of the liver, which was hyperaemic, swollen and studded with innumerable small gray nodules. No lesion was visible in the tonsils, pharynx, trachea or tongue. On the left side of the neck there was a large mass of tuberculous glands, 4½ x 2 cm., the center of which contained a large amount of broken down, cheesy material; on the right side some glands of moderate size with small nodules. The right lobe of the thyroid also contained tuberculous nodules. Brain was found normal, also the hypophysis. The tuberculous glands on the left side of the neck extended up to the base of the skull, where a large caseous mass began, which extended into another focus in the pyramidal portion of the left temporal bone. Caseation surrounded the middle ear on all sides. Microscopically tubercle bacilli were found in lung, liver, spleen, kidneys, lymph glands of the peribronchial region and mesentery, the neck and the caseous masses of the middle ear.

This case was quite evidently one of the rarely occurring cases of transplacental tubercular infection, sometimes called congenital. Pehù and Challier, who have searched the literature for reports of such cases, were able to collect only 51. It is obvious that in most instances the infection is the result of a bacillaemia occurring after the placental circulation is well established. However, Grulee, who has recorded one such case, considers that there may be two forms of such infection, which he denominates pulmonary and abdominal, and he says that the pulmonary form is not always of placental origin and may result from the aspiration of tubercle bacilli together with birth discharges at the time of birth. In the case reported here, the oldest lesion was undoubtedly the caseous nodule at the hylus of the liver and it is undoubted that, although the pulmonary symptoms were predominant, that this was a true case of infection through the placenta.

Recent action of the U. S. Department of Commerce in recommending China to American patent medicine interests as a good field in which to develop their business, is unanimously condemned by anti-tuberculosis workers all over the country through a resolution adopted by the National Association for the Study and Prevention of Tuberculosis made public to-day.

It is pointed out that China has not yet recovered from the effects of the opium habit that was foisted upon it by Western civilization, and that it is particularly unchivalrous of the United States Government to help foist a new evil upon this people while they are in the throes of reorganizing their society on a more intelligent and democratic basis.

DIFFERENTIAL DIAGNOSIS OF ABDOMINAL TUBERCULOSIS.

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There are certain interrelations between the various forms of abdominal tuberculosis which lend themselves to brief discussion. From that standpoint it is possible to consider the several types of tubercular peritonitis, tuberculosis of the liver and gall bladder,—pancreas, spleen, fallopian tubes and ovaries and certain forms of intestinal tuberculosis including tuberculosis of the appendix.

While primary tuberculosis within the abdomen may be conceived as possible, it is safe to assume that there are few if any exceptions to the general rule that initial tubercular lesions are of the lymphatic tissues, particularly the lymph glands, and that when tuberculosis manifests itself as peritonitis or disease of the abdominal viscera, the same rule holds true that applies in pulmonary tuberculosis, that is, that the disease is a conflagration arising from a smoldering tubercular lymphadenitis which originated during infancy or in childhood. Von Pirquet maintained from his observations of the cutaneous tuberculin reaction that 60 per cent. of adults have or have had tuberculosis. Observations by subsequent investigators have more than confirmed this estimate. Fishberg (M. Fishberg, the extent of tuberculous infection in childhood among the children of New York tenements as evidenced by the application of the cutaneous tuberculin reaction, *Medical Record,* N. Y., 1915, LXXXVII, 417) found in 589 children examined at the age of 14 years 75% reactors; of 692 children of tuberculous parents in New York tenements at the age of 14, 83.79%, reactors; under 1 year of age 10% of children reacted.

Children are fortunately born with a high degree of resistance to all disease. For example, at birth a child's immunity to measles and to diphtheria is very high. Measles is rare under six months of age as is likewise diphtheria. This native resistance to disease diminishes rapidly after the first year, it being at a minimum between the ages of 5 and 7. It may be assumed that native immunity to tuberculosis is likewise high at birth and that infection by the tubercle bacillus is arrested by the first line entrenchments consisting of the lymphatic tissues. The tubercle bacilli, however, halted in the lymph glands produce adenitis which in the vast majority of cases is sooner or later checked by the protective formation of specific antibodies and the process becomes quiescent unless from one cause or another the individual's resistance is reduced and the activities of the invaders again become manifest resulting in various types of clinical tuberculosis. So that abdominal tuberculosis excepting lymphatic tuberculosis is to be considered in the strict sense always secondary.

The pathways by which tuberculosis gains a foothold in the peritoneal cavity are either the blood stream, lymph channels or the rupture of a lymphatic gland, from diseased fallopian tubes, appendix, gall bladder or other such focus. It has been demonstrated that the tubercle bacillus may pass through the intestinal wall without the presence of ulceration and also that the disease may spread apparently through the diaphragm through the thoracic cavity without apparent lesion, although it is questionable whether or not the circulating blood is not in this case the transporting factor.

Types of Peritoneal Tuberculosis.—Miliary tuberculosis of the peritoneum may be a part of miliary tuberculosis. Tubercular peritonitis proper presents itself in various forms depending largely upon the rapidity of the inflammation. In the more acute types are seen a considerable amount of fluid with little tendency to the formation of adhesions. In the more chronic cases of this ascitic form thickening and rolling up of the omentum takes place, thickening and shortening of the mesentery, thickening and shortening of the intestine.

In this type of tubercular peritonitis spontaneous recovery may take place. Elestrotov found that in 136 cases treated medically 31.6 recovered; in 240 cases treated surgically 78.3% recovered. (Osler's Modern Medicine, Vol. V, p. 578.) Again, a loculated or encysted form may be recognized. the intestines are matted together by adhesions and enclose collections of fluid which may be serofibrinous, turbid or purulent exudations, are larger becoming confluent masses of caseous material surrounded by adhesions and giving rise to suppurating foci among the coils of the intestines. In this way there may be multiple abscesses with a tendency to erode throughout the surrounding tissues either through the abdominal wall usually in the region of the umbilicus or through a viscus as the intestines, kidney, vagina. Finally, in the obliterative form universal adhesions join the viscera and the abdominal v all. There is no exudation as seen in the loculated or ascitic form. Sometimes the masses so formed are tumor-like and may be readily felt through the abdominal wall or through the rectum. As a matter of fact, in many cases of tubercular peritonitis a rectal examination discloses masses that with difficulty are felt through the abdominal wall. It is seen then that in the more rapid form there is little tendency to the formation of tumors and a considerable tendency to the formation of free fluid in the abdominal cavity and in the slow type the tendency to the formation of tumors is marked and practically no tendency for the extravasation of fluid and between these two types lies the intermediate form in which there is very considerable thickening and adhesion formation and pockets of extravasated fluid modified by caseous degeneration. The symptoms vary chiefly with the rapidity of the disease. There is usually a history of failing health, loss of appetite, strength and weight as is seen in any form of tuberculosis. In addition to this symptoms will vary according to the anatomical changes present. In other words, according to the position and density of adhesions and hyperplastic masses. Such symptoms will be referable to the alimentary tract and to pain arising from pressure or more often from pressure and stenosis of the intestines with resulting colic. It is not

* Read before the Medical Society State of California, Fresno, April, 1916.

unusual to find a leukocytosis, especially in children.

Tuberculosis of the Gall Bladder.—Two types have been recognized, a chronic ulcerative form associated with the presence of gall stones and an acute form with necrosis of the mucous membrane which may be associated with tuberculosis of the cystic and common bile ducts (Rolleston, Diseases of the Liver, etc., 1912, page 627). Primary tuberculosis of the gall bladder may occur as a chronic ulcerative process in the sense that it is not associated with clinical tuberculosis elsewhere. It may also occur following pyogenic infection of the gall bladder either with or without calculus. Secondary tuberculosis of the gall bladder may result from infection of other organs, especially the lungs or as part of general miliary tuberculosis (Bandelier-Roepke Die klinik der Tuberkulose, 1914, p. 440). The process may extend from the gall bladder to the liver or from the liver to the gall bladder. Diagnosis can scarcely be made except by means of exploratory laparotomy. Tuberculosis of the gall bladder may result in the persistence of a fistula after operation. Pericholangitis may be tubercular and shows miliary tubercles about the duct with an effusion of fluid and adhesions.

Tuberculosis of the female pelvic organs usually arises in the fallopian tubes, ovaries and uterus. It is of importance as a possible source of tubercular peritonitis. It is unnecessary to enter into a description of these lesions further than to say that small and large tubercles, ulceration and caseation with distension of the tubes and ovaries may occur. In relation to the treatment of tubercular peritonitis the removal of a tuberculous uterus or the adnexa, particularly a tubercular fallopian tube, may be the controlling factor in the treatment of peritoneal tuberculosis. This is also true regarding tuberculosis of the gall ladder and appendix and these three organs, appendix, fallopian tube and gall bladder should always be carefully inspected during an operation for tubercular peritonitis.

Tuberculosis of the liver may be either a part of general miliary tuberculosis in which case the lesions are diffuse throughout the liver or localized tuberculosis of the liver may occur in the form of bile duct tuberculosis forming caseous tuberculous masses or solitary tuberculous abscess, the latter of which is very rare. As a rule hepatic tuberculosis is secondary to outspoken processes elsewhere, particularly tubercular ulceration of the intestines in which condition hepatic involvement is rather more common than is generally suspected; the infection taking place through the portal vein produces miliary tubercles and later masses of tubercular tissue,—in effect a tuberculosis of the portal spaces. The liver is usually somewhat larger than normal and on section shows a number of white caseous areas or bile stained cavities with caseous walls. Jaundice is absent. Again, multiple tubercular lesions may occur in the liver closely resembling gummata and fairly easily nucleated. Sometimes these masses may be felt through the abdominal walls during life and may be associated with considerable pain. In some cases splenic enlargement is present. Resemblance to carcinoma of the liver is very considerable on account of emaciation, general weakness and loss of appetite.

With secondary infection of pyogenic organisms the tuberculous mass may develop into an abscess which may be either within the substance of the liver or near the surface, the latter case giving rise to localized perihepatic or subphrenic abscess. Single lesions are very rare. There is nothing characteristic in the symptomatology of tuberculosis of the liver or gall bladder and diagnosis is practically never made except upon operation or post mortem.

Tuberculosis of the Pancreas.—Miliary tubercles in the pancreas are not uncommon in tuberculosis of other organs, especially in children. But while tubercular masses have been described in the pancreas palpable through the abdominal wall, they are most rare and appreciable interference with the function of the pancreas by tubercular disease has not been described.

There are three interesting forms of tuberculosis which may occur in the region of the caecum,—tuberculosis of the appendix, hypertrophic tuberculoma of the ilium and hypertrophic tuberculoma of the caecum and tubercular lymphadenitis of the mesentery behind the appendix. The latter may give rise to such large glands as to stimulate chronic appendicitis. As a rule they are readily removed. Tuberculosis of the appendix is said to be found in 2% of the operations upon the appendix (Lockwood). It is usually secondary to tuberculosis of the caecum but may be primary. Usually there is simply tubercular ulceration or in other cases extensive involvement of the appendicial walls with caseation. Milary tubercles and adhesions may be seen in the adjoining peritoneum either localized or more diffused. Hypertrophic appendicial tuberculoma has been observed. Macroscopically it is many times difficult to distinguish tubercular from other forms of appendicitis. Hypertrophic tuberculoma of the ilium or caecum arises from either submucous or subserous lesions resulting in great thickening of the intestinal wall to such an extent that hyperplastic tuberculoma of the ilium or caecum may readily be mistaken for sarcoma. A helpful point in the diagnosis of tubercular appendicitis and hypertrophic tubercular changes in the ilium or the caecum lies in the fact that tuberculosis of the lung is also present. The local symptoms are no different from those of other forms of tumor or low grade inflammation. Stierlin's sign is of importance in differentiating hyperplastic tuberculoma of the caecum from cancer. By means of the X-ray it is seen in the presence of the tubercular condition that the bismuth mass goes more rapidly through the caecum resulting in an X-ray picture which gives no bismuth shadow in the caecum—only above and below it. If the question of diagnosis between hypertrophic tuberculoma of the ilium and of the caecum arises, the caecum empty of bismuth with the X-ray test would speak in favor of involvement of the caecum or on the other hand if bismuth shows in the caecum it would speak in favor of the lesion being in the

ilium. Strangely enough Stierlin's sign is absent in cancer of the caecum. Patient R. D., 29 years old, tailor. Father died of tuberculosis. Patient came to the University of California service, San Francisco Hospital, suffering from pain in the right iliac region. He had been treated for pulmonary tuberculosis which was of about one year's duration. His present illness began with a sudden pain in the right lower quadrant which disappeared in a few minutes some two and one-half weeks before admission to the hospital. This pain recurred suddenly while walking and was accompanied by nausea and vomiting. The pain spread to the whole abdomen. The patient was admitted to the hospital with a fever of 100.5°. Examination of the abdomen showed slight rigidity of the entire abdomen, lower more than the upper, and of the right more than the left, considerable tenderness in the outer half of the right iliac fossa. An elongated round boggy mass could be palpated at McBurney's point, which was very tender. With rest in bed the pain and local symptoms disappeared in the course of a week so that there remains at the present time a patient with pulmonary tuberculosis and a mass about 2½ inches long by an inch wide, sausage-shaped, lying obliquely in the region of the appendix only slightly tender on pressure and which undoubtedly is a hypertrophic tuberculoma either of the ilium or of the caecum. Stierlin's sign being present in this case we take it to be a lesion of the ilium.

Chronic hyperplastic tuberculosis while probably more common in the iliocæcal region has also been observed in the sigmoid flexure. The diagnosis of subserous fibroma should be avoided until tuberculosis has been excluded.

In conclusion it may be said that tuberculosis of the abdominal viscera is commonly associated with pulmonary tuberculosis but that the primary infection is to be searched for in the lymphatic system, especially the peribronchial and retroperitoneal glands; that the type in which tubercular peritonitis presents itself depends upon the rapidity of the inflammation, rapid processes being associated with tendency to formation of fluid and less tendency to the formation of adhesions a slower process giving rise to thickening and adhesions with fluid in the shape of walled-off collections and abscess formation, the most chronic giving rise to adhesions alone and hyperplastic growths in the walls of the intestine. Fever is usual in the acute and subacute forms and may be absent in the chronic forms, or there may be a subnormal temperature. That the fewer adhesions the better prognosis and that the ascitic form lends itself readily to operative interference. When operation is resorted to special attention should be devoted to the appendix, fallopian tubes and gall bladder.

TOXIC GASTRIC HEMORRHAGE.*

By E. L. CRISPIN, M. D., Mayo Clinic, Rochester, Minn.

While the development of gastric surgery has proved ulcer to be the most frequent cause of bleeding from the stomach and duodenum, the coincident development of pathology in the living has emphasized the fact that frequently there may be gastric hemorrhage without any demonstrable surgical gastric lesion. The opinion is prevalent among the laity that hematemesis means ulcer requiring operation, and hemorrhage from the stomach is too readily accepted by physicians as sufficient evidence to warrant surgery. I wish to call attention to the hemorrhages occurring from other than true surgical lesions, and to the importance of differentiating the causes of bleeding that are medical from those that are surgical.

The calloused ulcer derives greatest benefit from surgery. However, gastric surgery has been too often resorted to without benefit to the patient. Particularly is this true in cases in which hemorrhage was the principal cause for exploration. Often when an abnormal constitutional condition is not obvious, bleeding from the upper gastro-intestinal tract is considered as coming from a so-called hidden or non-symptomatic chronic ulcer, and the patient carries a gastro-enterostomy for ulcer for which there was not sufficient evidence before operation and no evidence at the time of operation. The burden of differentiating hemorrhage due to chronic ulcer from hemorrhage due to non-surgical conditions rests with the internist.

It is true that we occasionally see ulcers, benign and malignant, of which the histories are meager and alone are not sufficient for clinical conclusion The proportion of these will decrease with a more general knowledge of the varying clinical factors that are helpful in the recognition of the atypical group, and roentgenology will further assist in their diagnosis. Clinical study supplemented by the diagnostic efficiency developed in gastric roentgenology has made it possible to determine the presence or absence of the bleeding gastric lesions that can be benefited by surgery in a very large percentage of the cases of hemorrhage from the stomach.

To designate the oozing of blood from the stomach in the supposed absence of chronic ulcer, Sir Edwin Cooper Perry suggested to Hale White [1] the term "gastrostaxis," which is similar etymologically to "epistaxis." White [2] advanced the opinion that there might be a clinical group of this type among young women having pain, vomiting, and hematemesis, without ulcer symptoms, and in whom spontaneous recovery was the rule. The suggestion brought out considerable discussion in regard to gastric hemorrhages of obscure origin by White,[3] Bolton,[4] and Hort.[5] As the conditions in which such hemorrhages usually occur are toxic, the term "toxic gastric hemorrhage" suits our purpose better and will be used in referring to them here.

Blood that is vomited and tarry stools do not always mean hemorrhage from chronic gastric ulcer. Blood from the lungs and pharynx may be swallowed and later vomited. Bleeding from

* Read at the quarterly meeting of the Goodhue County (Minnesota) Medical Society, June 1, 1916.

esophageal varices, particularly when associated with the toxic state in cirrhosis of the liver, may be severe and have the appearance of gastric hemorrhage. In the purpuras, leukemias and anemias, especially anemias associated with enlargement of the spleen and liver, there may be severe bleeding from the stomach. In constitutional diseases and toxemias associated with hepatic and renal disease, it is common to find on necropsy that the gastric mucous membrane is intact, though vomiting of blood occurred during life. Blood may be vomited during exacerbations in states of hypertension and in secondary congestions of the liver and spleen. Endocarditis may be a remote cause of gastric hemorrhage. Also, exudative erythemic states of the viscera are possible causes of bleeding.[6] Arteriosclerosis of the abdominal vessels with aneurysmal dilatation and rupture into the stomach has been reported.[7] During the attacks of gastric crises in tabes, there is often coffee-ground vomitus and at times bleeding may be severe. Young females may have extensive hemorrhages with no proof of chronic ulcer and with usually spontaneous recovery.

With infections of the gallbladder and appendix there are occasional hemorrhages for which no adequate cause in the stomach is found at operation. In an operated series studied in the Mayo Clinic,[8] bleeding was associated with infections of the gallbladder and gastric symptoms in 5 per cent., and with appendicitis and gastric symptoms in 2 per cent. Deaver[9] mentions infections in the fallopian tubes as a causative factor in some cases of gastric hemorrhage. Bleeding from follicles or superficial erosions in the stomach permitting hemorrhage may be secondary to acute infections in the tonsils. Rosenow[10] has shown the association of various streptoccoccic infections with bleeding from hemorrhagic points and superficial ulcers in the gastric mucosa. These may become so extensive that large patchy areas of the mucosa ooze blood, though when wiped off, individual points are made out with difficulty.

Dieulafoy[11] has called attention to gastric bleeding from the two following varieties of non-chronic ulcer: (1) Simple erosions consisting of mere abrasions of the surface epithelium. These though so small as to be scarcely perceptible to the naked eye, may give rise to most alarming hemorrhages. At necropsy they may be easily overlooked, but during the course of the hemorrhage the mucous membrane appears to be studded with numerous bleeding points. (2) Exulceratio simplex. The lesions of the type to which Dieulafoy applies this term rather more extensive, and the surface layers are removed to such an extent that the arterioles running under the muscularis mucosae are exposed. This form may give rise to severe hemorrhages that may even prove fatal. On operation the condition appears as small bleeding fissures, small patchy areas oozing blood, or thick hemorrhagic infiltrations from which blood literally seeps.

Deaver,[9] in discussing hemorrhagic disease of the stomach not associated or closely related to gross ulcer, says: "Excepting extrinsic poisons, I believe the violent congestion of the gastric vessels is primarily dependent on an intra-abdominal, or more rarely, remote, focus of infection." This focus of infection he believes is most commonly the appendix or gallbladder. According to Mayo Robson[12] the gastric lesions after death in some cases of sudden severe hemorrhages, particularly in the young in whom there is no clinical evidence of ulcer, seem altogether inadequate to explain the nature of the serious hemorrhage. It is his opinion also that: "Capillary oozing or bleeding from arterioles is much more common and accounts for many more cases of gastric hemorrhage than has been hitherto supposed." Hemorrhages of this kind, parenchymatous hemorrhages in the apparently healthy male, hemorrhagic gastralgias and the large group of variously defined bleeding from the stomach in which there is sudden onset, absence of symptoms and usually spontaneous recovery, are of infective or toxic origin, and surgery will be of doubtful benefit.

Typical acute gastric ulcer may be the source of repeated hemorrhages if there is erosion of the vessels at its base, but rarely causes fatal bleeding. At operation these ulcers may be shallow and not visible or palpable through the wall of the stomach. When secondary to gross infection elsewhere, mucous ulcers may be multiple. Chronic gastric and duodenal ulcers as a rule do not bleed copiously. Bleeding from malignant disease usually is small in amount like that from ulcer, and more or less continuous.

In seeking a cause for gastric hemorrhage a history of ulcer should be sought and, when necessary, diagnostic evidence should be brought out by every adjunctive means available. If evidence indicating ulcer is not strong, effort should be made to prove or exclude all the numerous conditions that might be underlying causes of the hemorrhage.

In general, surgery offers the best results for ulcer of the chronic calloused type. In this condition the symptoms of ulcer are marked and the patient goes to the physician usually because of the distress from the ulcer rather than because of the hemorrhage. A second group of patients with gastric hemorrhage lays greater emphasis on the bleeding and complains only of gastric symptoms that are more or less indefinite. In such cases effort must be made to determine the presence or absence of calloused ulcer or of a toxic or infective condition as the cause of the hemorrhage. A third group of patients are those who come for examination because of the hemorrhage but whose gastric symptoms are of minor importance. They believe that they have an ulcer, frequently have been told that they have ulcer, and have often resorted to gastric surgery which has not prevented subsequent hemorrhages.

Speaking broadly, cases of hemorrhages without gastric symptoms, either before or after surgery, should be considered toxic. The non-surgical nature of the causative factors, such as the blood diseases and secondary congestions, are usually easy to determine. Medical observation will further develop the exact nature of many hemorrhages of the toxic group and relegate them to their proper medical sphere. When an

infective source, either intra-abdominal or remote, is found, the possibility of an association between the gastric hemorrhage and this infected atrium should be considered. In many such cases the hemorrhage is probably toxic. When medical observation determines the presence of abnormal constitutional states such as diseases of the blood, renal toxemias, disproportional varices, pathologic vascular tensions, multiple angiomas, syphilis or tuberculosis, the hemorrhage should be considered of toxic nature. Correction, when possible, of the underlying conditions, and waiting, rather than surgery, is advisable. Any surgery in these cases should be only in the nature of exploration without promise as to results. Spontaneous hemorrhages occuring in young women and parenchymatous hemorrhages in which evidence does not point to chronic ulcer, should also be considered toxic. They are not surgical; spontaneous recovery is the rule.

Patients giving a history of repeated severe hemorrhages over many years, with an ulcer history, which though not clear-cut, is strengthened by adjunctive evidence, and in whom no constitutional cause can be found, should have an exploratory operation. In such cases the hemorrhage is probably due to a surgical condition. Well-nourished patients who have had one or a few hemorrhages, and for whom the clinical or contributory data are very poor, may be considered toxic until medical observation proves the absence of a constitutional condition as a factor, or time brings out evidence of ulcer. If surgery is indicated at all for gastric hemorrhages occuring in the presence of intra or extra-abdominal infection, and accompanied by indefinite gastric symptoms, it should be applied to the focus of infection rather than to the stomach.

Patients who have had repeated hemorrhages for many years, who are past middle life, whose general appearance is below par and of whom the history and evidence of ulcer is indefinite, should also be carefully studied for toxic causes. The following abstracts of histories will serve to illustrate various types of gastric hemorrhages.

CLINICAL EVIDENCE ALONE INSUFFICIENT FOR ULCER. EXPLORATION BECAUSE OF POSITIVE ROENTGEN FINDINGS.

Case 146,581, M. C. B., traveling salesman, aged 52 years. Examined November 30, 1915. Patient had been having hemorrhages from the bowel, black and tar-like, for thirty years; in all, about twenty; in bed after each attack. The last hemorrhage occured in June, 1915. Three hemorrhages in 1913. No clear-cut gastric history, though he had had distress for days at a time, and on a few occasions for a couple of weeks. Food relief variable; never used soda; never had colic. Present trouble with stomach of about two weeks' duration. He dieted for two years but did not obtain relief. In present attack he had had a little distress at night, varying from 11 p. m. to 5 a. m., and some distress after meals. Most of the hemorrhages "have come out of a clear sky when he was feeling his best." Epistaxis frequent in youth, but never put him to bed.

Examination. A healthy looking man, 5 feet, 9 inches in height, weighing 145 pounds; no weight loss. Mucous membranes somewhat pale. Multiple pea-sized, raspberry angiomas over body. Hemoglobin 70 per cent. Gastric analysis: Acids 58, 44, 14; no food remnants. Wassermann negative. Coagulation time three minutes. Blood pressure 128, 90. Eye grounds negative. Urine negative. Protoseopie findings negative. Roentgen findings: Cap deformity; duodenal uleer.

A history eovering thirty years with slight symptoms except for bleeding, clinical absenee of obstruction at the pylorus, and the angiomas over the body, made diagnosis doubtful. An exploratory operation was performed beeause of the roentgen evidence. A duodenal uleer was found one-half inch below the pylorus.

CLINICAL AND ADJUNCTIVE EVIDENCE INSUFFICIENT FOR ULCER. CONSIDERED TOXIC AND NOT NOW SURGICAL.

Case 141,079; T. A. C., advertising manager of a newspaper, aged 50 years. Examined September 15, 1915. Patient had been in the habit of eating fast; he worked hard; burned the candle at both ends. Formerly a printer. Twenty-five years ago he had anemia whieh he thought was due possibly to lead poisoning. In the last twenty-five years he had had a few attacks of gastric trouble lasting a week or two. Symptoms meager. In Oetober, 1914, he fainted one day while in the toilet; soon vomited food and blood. Vomited elots three times within a short period. Had tarry stools for the following three or four days. Was put on a Von Leube diet and rapidly regained his health; well since. Came for examination eleven months later because an ulcer had been diagnosed at the time of the hemorrhage. No symptoms since hemorrhage exeept a little discomfort without food relation, in the left hypoehrondrium.

Examination. Height 5 feet, 10½ inehes; weight 195 pounds; no weight loss; skin somewhat highly colored. Blood pressure 178,100. Gastric analysis: Acids 66, 56, 10. No food remnants. Hemoglobin 89 per cent. Differential blood eount normal. Coagulation time eight minutes. Wasserman negative. Negative fundi. Urine showed a few hyalin casts. Roentgen finding: Stomach indeterminate.

On account of lack of evidence of ulcer, and because of the blood pressure, urine findings, coagulation time, and patient's generally well-nourished condition, diagnosis was made of toxic hemorrhage. He was advised about caring for his general health, and sent home for observation.

NEGATIVE GASTRIC EXPLORATION. CONSTITUTIONAL STATE. VISCERAL ANGIO-NEUROTIC EDEMA BELIEVED TO BE CAUSE OF BLEEDING.

Case 101,588; W. H. S., paper hanger, aged 40 years. Examined March 4, 1914. This patient had been urged a number of times to have operation for gastric ulcer. He had gastric trouble intermittently for twenty-three years. When 17 had cramps, were so severe as to double him up. He used to tie a towel tight around his waist, and a number of times was rolled over a barrel to relieve the cramping pain. These attacks came frequently for a few weeks and then disappeared for weeks or months. Only oecasional trouble between the ages of 20 and 30. In an attaek when about 31, he vomited a large handful of clots of blood. No clear-cut food relation to gastric pain. Present attack three weeks. No regularity. For three months had had most marked angioneurotic disturbances. Large plaques came out on his skin each night. Roentgen findings: "Lesion of the stomach at or near the pylorus." The patient had angioneurotic swellings. At exploration (C. H. Mayo) neither lesion nor cause for hemorrhage

was found in the stomach. The gallbladder, showing doubtful pathology, and the appendix were removed.

The attacks of pain have continued since operation without any material change in nature. They are regarded as visceral manifestations of angioneurotic edema. Because of the constitutional condition the hemorrhages may be considered toxic.

YOUNG WOMAN. HEMORRHAGE. TREATMENT FOR ULCER. NO SYMPTOMS OR EVIDENCE OF ULCER. SPONTANEOUS RECOVERY.

Case 147,636; Miss A. R., aged 21. Examined December 11, 1915. She complained of gastric trouble and menorrhagia. Eighteen months before a severe hemorrhage occured in the stomach; melena persisted for a number of days. She was put to bed and kept on milk diet for seven months. Her physician said the bleeding came from an ulcer in the stomach. She had been away at school, had eaten irregularly injudiciously a large amount of candy; enjoyed social activity, dancing, tennis, etc. Indefinite distress in the stomach began a month or two before the hemorrhage, about the middle of the school year. Stomach always tender; with pain and soreness after eating ordinary foods; never free periods. No food relief. Menstruation irregular, increased flow for three years; for two weeks at each period a profuse flow. Patient said she had had grippe three or four times. Wrenched her back four years ago and it "had been sore ever since."

Examination. A thin, somewhat pale young girl. Very nervous. Weight 104 pounds. Blood pressure 100, 78. Urine negative. Hemoglobin 89 per cent. Gastric analysis: Acids 20, all combined. No food remnants. Roentgen findings: Stomach negative. At the hotel the patient ate everything, and forgot all about her stomach.

Because of the hemorrhage she firmly believed that she had ulcer, as did her mother and her brother, a physician. Her physician had advised operation for ulcer. The seven months in bed on ulcer treatment had made her a marked neurasthenic. There was neither clinical nor laboratory evidence of ulcer. Patient was told that there was no evidence of chronic ulcer and operation was not advised.

GASTRIC ATTACKS WITH HEMORRHAGES, FOLLOWING TONSILLITIS.

Case 145,217; Mrs. R. T., aged 24 years. Examined November 8, 1915. Epigastric pain, hemorrhages from stomach. She has had repeated attacks of tonsillitis and rheumatism. Distress in stomach at times for eight years. Cramp-like pains lasting five or ten minutes associated with nausea. Vomited during the first five years, but seldom vomited food. Has had numerous hemorrhages from stomach, in one of which she said she lost a quart of blood. Gastric symptoms lasted ten days to two weeks; she was then relieved for a period of months. No definite food relationship. The pain was present even when a strict diet was maintained. About three attacks of tonsillitis each winter. Gastric attacks always followed tonsillitis. In a remission four weeks before there was a hemorrhage from the stomach.

Examination. Short, soft, systolic blow heard at cardiac apex. Blood pressure 122, 82. Pulse 68. Temperature 99.2. Urine negative. Hemoglobin 70 per cent. Gastric analysis: Acids 48, 28, 20. Roentgen findings: Chest negative; stomach indeterminate.

Consultant's Note. "Not typical ulcer. History suggests superficial type of acute lesion with hemorrhage. The frequency with which tonsillitis has preceeded attacks is interesting." Tonsillectomy by Dr. Matthews. Culture from tonsils by Dr. Rosenow showed streptococci, and animals injected showed multiple hemorrhages and superficial ulcers of the stomach, due to streptococci. Hence these hemorrhages, which seemed to be toxic, were apparently due to localized hematogenous infections of the mucous membrane of the stomach, following tonsillitis.

GASTRIC SYMPTOMS WITH HEMORRHAGES. EXPLORATION: CHRONIC APPENDICITIS. NEGATIVE GALLBLADDER AND STOMACH.

Case 126,387; E. G. P., contractor and builder, aged 46 years. Examined March 12, 1915. This patient had had myalgias, followed by ecchymoses that put him in bed for three or four days. For fifteen years he had had trouble with his stomach which came on in spells formerly lasting for months. Trouble now continuous. Had had some food relief and relief by alkalies and vomiting. A burning sensation was felt in the stomach usually from 10 to 11 a. m. Hemorrhages from the stomach. Vomited a large quantity of blood during a period of two days. Four months ago had another hemorrhage and at that time tarry stools. Described pain radiation as being "most anywhere" in the upper abdomen. Patient very nervous; continuous headache for last two months.

Examination. Under weight. Blood pressure 150, 105. Hemoglobin 88 per cent. Coagulation time five minutes. Wassermann negative. Moderate right pyelitis, proved by ureteral catheterization. Gastric analysis: Acids 34, 22, 12. No food remnants. Exploration for peptic ulcer (W. J. Mayo).

Findings at operation: "Sub-acute appendicitis. Appendicitis apparently would account for symptoms as it was rather unusually well marked. Gallbladder and duodenum normal. Gallbladder somewhat adherent, but empties easily and contains no stones." Appendix removed. After negative exploration of upper abdomen, the hemorrhages were believed to be gastrotoxic, secondary to the infection in the diseased appendix.

GASTRIC SYMPTOMS, HEMORRHAGE, CAME FOR "ULCER." EXPLORATION: CHOLECYSTITIS PANCREATITIS. NEGATIVE STOMACH AND DUODENUM.

Case 124,020; Mrs. N. M., aged 36 years. Examined February 8, 1915. Trouble with stomach began four years ago. First attack, four months. One free period of three years. Second attack began one year before; was ill nine months. She had pain nearly continuously except when eating. Vomited sour water. Once she had delayed vomiting. Slight food relief. Soda relief formerly. Had sharp cutting pain in left epigastrium for which her physician had given morphia. Tarry stools. Coarse and sour foods caused distress. Patient referred to the Mayo Clinic with a diagnosis of ulcer with hemorrhage.

Examination. A very neurotic, fairly well nourished woman. Area complained of the left epigastrium. Slight tenderness to deep pressure in right lower abdomen. Blood pressure, 125, 80. Urine negative. Hemoglobin 85 per cent. White blood cells, 7000. Gastric analysis: Acids 28, 12, 16. No food remnants. Roentgen findings. Stomach indeterminate. The physician at home and the patient were sure that ulcer was the cause of her distress and bleeding. She was under observation a week, then sent for exploration of the stomach, gallbladder and the appendix. Cholecystectomy and appendectomy were done.

Findings at operation: (E. S. Judd) "Definite chronic cholecystitis and chronic pancreatitis. Head of pancreas twice its normal size, chronic appendicitis; stomach and duodenum negative."

NEGATIVE EXPLORATION—TOXIC CONSTITUTIONAL CONDITION—CARDIO RENAL SYNDROME WITH TRANSIENT HYPERTENSION.

Case 135,561; H. R. T., bank cashier, aged 60 years. Examined July 17, 1915. Patient had had hemorrhages from the bowels (tarry stools) seventeen years, ten years and five years ago. In September, 1914, also vomited blood; collapsed. In years past had to be careful of his diet and had intermittent discomfort. A clear history was difficult to obtain. A diagnosis of ulcer was made after each hemorrhage. In the Fall of 1914 a gastrojejunostomy was done for "ulcer on anterior duodenal wall one inch below the pylorus." Four weeks before coming for examination he had collapsed and the next day had profuse tarry stools.

Examination. Five feet, seven inches in height; weighed 130 pounds; underweight. Appeared weak and had marked pallor. Some bagginess under eyes. Sclera pearly; looked nephritic. Heart five inches to left. Diastolic murmur at aortic area. Blood pressure 185, 85. Hemoglobin 45 per cent. Coagulation time six minutes. Differential blood count normal. Gastric analysis: Acids 64, 54, 10. No food remnants. Wassermann negative. Old patches of hemorrhages in fundi. Phenolsulphonephthalein functional test 43 per cent. in two hours. Roentgen findings. Gastroenterostomy functioning; otherwise negative. Patient gained on ulcer diet. Was kept under observation for three weeks. Believed to be gastrotoxic, but because of reported presence of ulcer at the time of gastroenterostomy done elsewhere, and in order to clear up the nature of the condition, an exploratory operation was performed (W. J. Mayo).

Surgical report: "Two inches of the stomach and two inches of the duodenum were resected. Gastro-enterostomy in good condition. Site of supposed ulcer on duodenum resected. Patient in wretched condition." Pathologic report: Pyloric ring of stomach normal; on section scar of ulcer could not be found.

The patient gained rather slowly after operation. About three months later he had a very severe hemorrhage. Was found unconscious in a pool of blood in the bathroom. A letter from his home physician stated that a blood pressure of 250 systolic had been recorded a few days before the hemorrhage. It is probable that all of the bleedings were the result of a constitutional state, toxic in type, and of a nature that surgery could not benefit.

SUMMARY.

Toxic gastric hemorrhage is essentially a medical condition. Hemorrhage does not always mean chronic ulcer. Surgery should be resorted to for the calloused type of ulcer, and for this type only will it give the best results. Recognition of the true cause of hemorrhage from the upper gastro-intestinal tract is sometimes most difficult. At times evidence will warrant exploration to prove or exclude peptic ulcer as a cause. The presence of a constitutional disease without sufficient evidence of ulcer, makes medical observation and study, rather than surgery, advisable. In cases of hemorrhages of obscure origin, search for infected foci should be made and the possibility of their association with the cause of the hemorrhage should be considered. In addition, studies of blood diseases associated with bleeding, and further studies in blood pressure, with recognition of transient hypertensive states, will help to define and separate hemorrhages having their origin in surgical ulcer from gastric hemorrhages of acute infective and toxic origins.

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HYPOPHYSEAL SYMPTOMATOLOGY; A REVIEW.*

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Recent conceptions of the ductless glands differ from previous ideas, chiefly in that observers are now beginning to recognize the inter-dependence of these organs; to consider them more as inseparable complexes; and are striving to estimate correctly both their individual and reciprocal influences. The clinical manifestations resulting from endo-secretory disorders are usually described as composing one or more phases of a general polyglandular syndrome. It is the purpose of this paper to consider, very briefly, certain influences which the pituitary body may play in the production of some of these symptom-complexes.

In 1838, Rathke [22] described an ectodermic pouch budding from the bucco-pharangeal cavity which meets and partly surrounds the infundibular prolongation of the anterior cerebral vesicle. The tip of this prolongation subsequently becoming thickened, is known as the infundibular body, neurohypophysis or pars nervosa. Later the developing sphenoid bone obliterates the lumen of Rathke's pouch, the tip of which envelopes the infundibular body. This combined neuro-epithelial structure, or pituitary body proper, later becomes endowed with a dural capsule and occupies the sella turcica. It is present in all vertebrates showing its phylogenetic importance.

Histologically, the gland is divided into three parts—(I) the anterior lobe (pars anterior, pituitary gland proper) consisting of columns of cells surrounded by large sinusoidal spaces. These cells are classified by Flesch [10] (1884) into so-called chromo-philes, composed of eosino-philes and baso-philes; and chromo-phobes or neutro-philes. These cells show hypertrophic changes during pregnancy; atrophic during hibernation, etc.; (II) the posterior lobe (pars nervosa, infundibular body, neuro hypophyses, etc.) composed of a meshwork of loosely placed neurologia whose fibres radiate toward the infundibulum; (III) the pars intermedia of Herring, or the epithelial investment of the infundibulum. The two become fused. Structur-

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ally, the anterior lobe suggests a typical endocrinous gland discharging (according to Thaon [25]), a stainable colloid into the blood stream. Hyperplasia of this lobe apparently stimulates tissue growth, skeletal, cuticular, and subcuticular, and exerts an excitatory influence on the sex glands. The posterior lobe probably secretes an exceedingly soluble colloid which seems to have a definite effect on tissue metabolism, etc., directly into the cerebrospinal fluid by way of the third ventricle. This has been fixed and demonstrated by Herring [17], 1908. The blood supply, from an embrological standpoint, is parodoxical, the anterior lobe being supplied by a number of small arterioles passing down the infundibular stock, while a single artery coming from below and behind supplies the posterior lobe.

Hypophyseal physiology is slowly being unraveled. It was the Galenic and Vesalian [26] view that the gland elaborated a mucous secretion (pituita) which entered the nose and lubricated the nasal cavities. Magendie [27] considered it a lymph gland which collected the cerebral lymph and distributed it to the circulation.

Recent methods of investigation, (I) by injection of extracts; (II) by feeding experiments; (III) by glandular transplantation; (IV.) by partial extirpation of the hypophysis, have thrown much light upon its physiology.

(I.) The following effects have been recorded by the injection of extracts (whole gland): Houssay [27] thinks all extract "substances are secreted by the cells of the pars intermedia, and then collected and concentrated or changed into more active forms" in the posterior lobe. Oliver and Schäfer [21] (1895) noted a rise in blood pressure due to vaso-constriction and augmentation of heart beat; Howell [18] (1898) noted that posterior-lobe extract slowed and strengthened the pulse; Dale [8] (1906) called attention to its effect upon uterine contractions; Schäfer and Herring [24] (1906) showed that posterior lobe extracts produce kidney dilatation and diuresis (acting on the renal epithelium directly). Bell and Hick [2] (1909), Dale [8] (1909), Frank-Hochwart and Frohlich [12] (1910), noted that it caused vesicle and intestinal contractions; Borchard [4] (1908), Goetsch, Cushing and Jacobson [7] (1911), noted that it lowered the assimilation limit for carbohydrates and caused glycogenesis. Repeated subcutaneous injections of sterile extracts of the whole gland or posterior lobe alone cause emaciation. (Fodera and Pitten,[11] 1909) (Crow, Cushing and Homans,[6] 1910.) Clinically, posterior lobe extract has been used to strengthen uterine contractions, to increase intestinal peristalsis, and to stimulate the heart, etc.

(II.) Feeding Experiments—Goetsch's [14] (1916) recent "Studies on the Influence of Pituitary Feeding upon Growth and Sexual Development" in rats is most enlightening. He concludes whole gland, when fed in excessive doses, causes failure to gain in weight, loss of appetite, increased peristalsis, mild enteritis, certain nervous manifestations such as weakness of the hind limbs and muscular tremors. These symptoms are probably due to the posterior lobe element alone, for they can all be produced by feeding posterior lobe but not by feeding anterior lobe extract. The influence on the female sex glands of whole gland feeding shows ovaries, tubes and cornua of uterus larger and more vascular than in control. The ovary matures sooner, fimbriated end of tube is farther developed, lining cells are more ciliated and active, and endometrium is hypertrophic; likewise the uterine muscle is considerably more thickened and vascular than in the control.

Influence upon male sex glands (whole gland); —Testes show earlier growth and development; are completely and permanently descended at an earlier date, weigh more and show etxremely spermatogenesis when the control animal is still sexually immature.

Feeding anterior lobe alone (Goetsch) shows increase in weight, greater and more vigorous bodily growth, earlier and more active sexual development (shortened 1/3 normal time), sexual instinct early awakened, breeding earlier and oftener, the female having two pregnancies in seven months as compared to none in the control animals; and sexual organs in both sexes show histological advancement in all sex elements in the fed animals. The effect lasts through the life of the animal and even exerts a stimulating influence on the offspring in intrauterine life and during lactation.

Feeding of posterior lobe extract alone inhibits sex development and causes loss in weight, mild enteritis and increased intestinal peristalsis. Ovarian extract, (corpus luteum) has a stimulating effect upon the female, and a retarding influence upon the male sexual development. These results are cited with some emphasis because of new hope thus offered clinically by glandular feeding in hypopituitary states.

(III) Glandular transplantation (experimental hyperpituitarism) has been repeatedly tried and has universally failed. Halsted's [16] so-called "physiological deficit" must be present—i. e., hypopituitarism in these cases, if one is to expect reasonable success. Clairmont and Ehrlich [5] (1909) transplanted into the spleen; Schäfer [23] (1911) transplanted subcortically, subcutaneously, intromuscularly, into peritoneal cavity and into kidney substance with only a transient glycosuria. Waitz felder [28] 1914 reports an isolated attempt to produce hyperpituitarism in man by transplanting a pituitary and pineal gland (taken from an executed criminal) into the pectorals of a patient suffering from hypopituitarism. His attempt failed—marked dispositional changes ensuing for a short time only.

(IV) Extirpation methods:—(Experimental Hypopituitarism). Cushing [7] and his associates have succeeded in producing constitutional disturbances in animals by partial hypophysectomies, which simulate and explain some of the clinical syndromes observed in man, and which give just the opposite picture produced by Goetsch's feeding experiments. Cushing showed that hypophysectomized adult canines developed widespread adiposity, nutritional

changes of skin and its appendages, disturbance of carbohydrate tolerance, lowering body temperature, sexual inactivity, atrophy of the sexual glands and modification of most of the other ductless glands proved histologically. Hypophysectomized puppies remained infantile through life. Hypophysectomized adults showed regressive changes. These experiments proved that certain recognized symptom-complexes result from lessened pituitary glandular activity which is confined chiefly to the anterior lobe. Inversely, after castration in animals, the anterior lobe of the hypophysis becomes hypertrophic; and after pancreatectomy, definite changes appear in the posterior lobe, etc.

Clinically, pituitary disorders are usually classified under three heads:—the hyperpituitarism seen in gigantism or acromegaly; hypopituitarism evidenced by infantilism or sexual regression in adults; and dyspituitarism, or a mixture of the above types.

The hypophyseal diseases may be aptly compared to allied thyroid disturbances, in which the relation of hyperthyroidism to Graves' disease is similar to that of hyperpituitarism to gigantism or acromegaly; and in which hypothyroidism with its prototypes of cretinism or Gall's myxoedema is comparable to hypopituitarism with resulting infantilism or adult sexual regression; and lastly, as alternating periods of thyroid overactivity and sluggishness result in dysthyroidism (Marine's view)—so the same phases of alternating hyper- and hypopituitarism gives rise to a more complex state—dyspituitarism.

Hyperpituitarism gives rise to two similar but distinct pictures. If it sets in before epiphyseal ossification is completed—gigantism results. This syndrome is described as the "typus Lannois." [19] If the process occurs in adult life acromegaly follows. This is known as the "typus Marie" from the one who first described acromegaly in 1886.

Hypopituitarism is characterized (a) by a persistence of both skeletal and sexual infantilism when the process occurs in childhood—i. e., so-called "typus Frölich" [13]; and (b) by adiposity with reversive sexual changes when it originates in the adult, producing a clinical syndrome, the analogy of which is seen in Cushing's hypophysectomized dogs.

Dyspituitarism may combine all the varying clinical phases evidenced in primary hyper- and hypo-pituitary disease. Accordingly the largest number of cases fall into this class.

The following case of acromegaly was studied by the author under the direction of Dr. Harvey Cushing some two years ago.

The patient, male, was a healthy baby, oldest of six children, parents large boned. At thirteen, he began to grow tall and weighed 200 lbs.; was noted for feats of physical strength, was intelligent, had uncontrolled libido sexualis. At twenty-three, he had a severe illness accompanied by polyuria and followed by furunculosis (diabetic) (?). So far "typhus Lannois"—i. e. gigantism. At twenty-seven, first changes of acromegaly occurred—bursting headaches, growing acral pains, slight cerebro-spinal-rhinorrhea. At twenty-nine, failing vision (noted while sighting a rifle), and diplopia set in. At thirty-one, features began to get heavy, enlargement of hands and feet, polyuria, asthenia, drowsiness, loss of libido and potentio sexualis, complete blindness (2nd period of growth) "typus Marie." Height now 6 feet 6 inches, weight 269 lbs., blood pressure only 75-100, blood and urine examination negative. X-ray showed greatly enlarged sella turcica and characteristic tufted ends of distal phalanges. There was divergent squint; bilateral primary optic atrophy and superior hemianopsia of left eye; lymphoid tissue very much enlarged; spacing of teeth; large supple joints; skin moist, smooth and elastic; practically no beard; scant pubic growth of feminine distribution; discrete fatty tumor left shoulder (suggesting Dercum's disease); (in one of Dercum's cases, McCarthy [9] 1902, found an adeno-carcinoma of the pituitary body with testicular hypoplasia); high sugar tolerance (over 300 gms. glucose); temperature subnormal 97-98; testes soft, atrophied; thyroid small, soft. Thymus showed substernal dullness. Adrenal involvement indicated by pigmented skin, asthenia and low blood pressure. Sellar Decompression December 17, 1910, by Dr. Cushing showed chromophobe strumma:—vision temporally improved and headaches stopped. Then recurrence, 1914. Second operation 1914—similar findings—patient got weaker and died. Autopsy February 17, 1915, revealed involvement of most of the endocrinous glands as follows:

Lymphatics of lungs markedly injected.
Thymus—fatty infiltration.
Thyroid—cystic, colloidal goitre.
Spleen—soft, pulpy.
Liver—fatty degeneration.
Adrenals—normal.
Testes—extreme atrophy—tubules contain no spermatogenetic cells—interstitial cells increased.
Lymph nodes: mesenteric, cervical, omental, bronchial, mediastinal } enlarged
Pancreas—interstitial changes.

Tumor—chromophobe adenoma of pituitary body invading temporal lobes.

Hypopituitary states became recognized some fifteen years later than acromegaly. In 1901 Frölich [13] first described the syndrome of adiposity and genital aplasia, with disturbances in menstruation and libido sexualis associated with tumor of the hypophysis cerebri. This condition was named by Bartels [1] 1908 "dystrophia adiposo-genitalis." If the pituitary insufficiency antedates puberty, the secondary sexual characteristics fail to develop and infantilism results. In the male, the body is of the feminine type, breasts hypertrophied, pelvis broad, beard and pelvic hair scanty and of the feminine distribution, etc. If sexual development is complete before pituitary insufficiency occurs, then follow regressive sexual changes, i. e., loss of hair of axillae, eyebrows and pubes; loss of potentio and libido sexualis in the male and amenorrhoea in the female.

Biedl [3] considers these genital hypoplasias as due to changes in the pars intermedia. Goetsch [14] states "both experimentally and clinically there is direct interrelationship between disturbances in the genito-urinary sphere and affectations of the pituitary body. The normal hypophysis seems without doubt to exert a stimulating influence on the development and activity of the genital organs. Excessive activity of the gland is followed by premature development and overactivity of the genital organs: its deficient function results in genital underdevelopment and the non-appearance of sex characters."

Hypopituitarism may be associated with a tumor of the pituitary body proper in which cases we have a primary optic atrophy, and in typical cases a bitemporal hemianopsia; or it may be associated with neighborhood tumors elsewhere in the cranial cavity, which cause a diminution of the pituitary gland function by pressure. In this second class of cases, we have the cardinal symptoms of a brain tumor with choked disc and failing vision, headache, nausea and vomiting, and added to that the regressive sexual changes so characteristic of hypopituitarism.

The following case, recently seen by the author, is cited as representative of this class. The patient, a female stenographer, single, age twenty-six, dates her present trouble from November, 1914, when she began to have backache and pain in the back of the neck. In December, 1914, she collapsed and remained in a state of semi-coma until May, 1915. Since May, 1915, when she gradually roused from her semi-conscious state, she has complained of bi-temporal and occipital headaches, nausea, vomiting, diplopia, failing vision (no hemianopsia), constipation and increase in weight. She began to menstruate at fourteen and flowed regularly for three years. Menses ceased at seventeen and have not since recurred. Examination revealed an obese, lethargic girl of twenty-six with marked old choked disc and nearly blind, (light perceptions in left eye); venules of eyelids dilated, (right external rectus palsy); skin soft, elastic; absence of all axillary and pubic hair; nails dry and brittle; no lunulae; skeleton small; visceral examination normal; temperature 98, blood pressure 108-110; blood Wassermann-negative. X-ray showed normal sized sella with slight thinning of posterior clinoids. Diagnosis of interpeduncular brain tumor, probably from congenital infundibular anlage. Anterior lobe feeding and right subtemporal decompression advised and refused. The regressive sexual changes here are believed to be due to an under-functioning of the pituitary gland which in turn is occasioned by a neighborhood brain tumor pressing upon it.

The author would especially emphasize the complex nature of both cases cited in this paper. The acromegalic after passing through the stage of gigantism ("typus Lannois"), and acromegaly ("typus Marie"), became definitely a victim of an insufficient though greatly hypertrophied hypophyseal gland; as evidenced by the secondary period of asthenia, sexual impotence, obesity, hypotrichosis, etc. During life, he passed through all the phases of hyper- and hypo-pituitarism. At one time, he needed partial hypophysectomy and again actual glandular feeding.

The second case is complex because the pituitary gland is not primarily involved but is the victim of outside pressure influences, decreasing its functionary power. Clinically, it gives the picture of hypo-pituitarism.

Post-mortem examinations in cases of pituitary disease have shown repeatedly—aside from the primary hypophyseal lesion—pathological changes in the other ductless glands; a thyroid enlarged or atrophic, pancreatic islands infiltrated with fat, trophic changes in the adrenals, genital aplasia and even fatty degeneration of the liver. Such findings can almost invariably find interpretation in the clinical history—and the relative hypophyseal influence estimated—for in every case this influence represents but one phase—dominant or recessive—of a general pluriglandular syndrome.

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VACCINE IN TYPHOID.

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In reply to a letter from our secretary I wrote Dr. Jones that I would prepare and read an article on the use of vaccines. I had in mind going over my records and touching the high points in their use in typhoid, gonnorrhœa, whooping-cough, respiratory infections, etc. On looking over my case records and finding that my results with typhoid vaccine differed from the generally-accepted view of little or no effect on temperature, I decided to give only my results with typhoid vaccine. By far my best results have been in tuberculosis, where they have always been uniformly good, more than that, splendid. I am treating at the present time a case of tuberculosis of the larynx. This case came to me from Oakland last March. When she first came you could not hear her speak across my office. Swallowing was very painful. To-day, after three and one-half months' treatment with tuberculin, she is only slightly hoarse, can even sing, absolutely no pain on swallowing, and she has gained some in weight.

In 1908 an article of mine appeared in the New York Medical Journal noting the results I had obtained with diphtheria antitoxin in bronchial asthma. The conclusions I drew were not in entire accord with the conclusions of others at that time, but I believe they are regarded as correct now. While the conclusions I draw in regard to typhoid vaccine may not be correct they may prove of value in some way.

The value of prophylactic typhoid vaccine is beyond question and will not be discussed in this paper. This applies only to the therapeutic use. In Watters' analysis of more than a thousand cases treated with vaccine, they agree in the following results: Patients show less depression, a lower temperature curve, fewer complications, and were brighter throughout the course of the disease.

Their least important effects seemed to be on the temperature curve. While less depression and a brightening-up of the patients were the two points most marked in my cases I did also observe a decided effect on the temperature in the cases where any effect at all was noticeable.

We have been assured over and over again that we can expect no results from therapeutic vaccine because, they say, the symptoms of typhoid are caused by a poisonous split protein from disintegration. Therefore, if we give the protein vaccine we are simply increasing the poison and aggravating the disease so we are not justified in making clinical trial of the therapeutic vaccine. That is theory and test-tube science which does not always apply to the human body, though some of our so-called authorities would like to have us believe it does. Pure physical science works wonderfully in diagnosis, but when it comes to treatment the human body often refuses to become a test tube.

One of the greatest compliments I ever heard given the country-town doctor was given several years ago in New York city. A leader of the medical profession in that city said: "If I were taken very ill I would want Dr. Osler of Baltimore to diagnose my case but I would want a certain doctor up here in a country town whom I know to treat me. In fact I know a large number of country-town doctors, any one of whom I would choose to treat me in preference to our large-town theorists." It is true that this was said in 1902 when drug nihilism was at its height, but it is true to-day in that bedside results are superior to test-tube results, though bedside results are more difficult to obtain and both are essential to best results.

I have used typhoid vaccine in fifteen cases but I am only going to report to you six cases, as they all fall into two divisions and are simply repetitions, cases in which the vaccines gave results and cases in which no effects could be noticed.

Case No. 1. G. R., a boy aged three years. Had been ill two weeks before I was called. He was delirious at first visit. Pulse 150. Temperature 105. Widal was positive. As the patient lived fifteen miles from my office and I had no typhoid vaccine on hand it was two days after I first saw case until I was able to get Widal and the vaccine. During this time temperature continued between 104½ and 105½. Pulse from 150 to 160. Forty-eight hours after first visit I gave this three-year-old boy ½ c.c. typhoid vaccine containing 250,000,000 bacteria. Twenty-four hours later delirium had ceased. Pulse 130; temperature 103½. Forty-eight hours after dose, no delirium, temperature 101, pulse 120. Boy seemed greatly improved and much brighter. The next day he was about the same. The next day he was delirious again and continued so with a pulse around 150 and temperature around 105 for ten days. He received three additional doses of vaccine. He recovered in the usual way of a severe typhoid, the first dose of vaccine apparently giving remarkably satisfactory results with no results whatever from the following doses.

Case No. 2. Sister of above boy, two years old. Began showing signs of typhoid when I first saw case No. 1. She was not very ill but Widal was positive. Temperature 102, pulse 120. I gave her one-half c.c. or 250,000,000 bacteria. Within forty-eight hours temperature and pulse were normal and remained so. The remainder of this family, consisting of an older sister, a two-months-old baby brother, a father and mother, all were given prophylactic vaccine. None contracted the disease.

Case No. 3. R. P., boy aged two and one-half years. He had been ill about one week when I first saw him. Temperature 102, pulse 130. Widal negative. I made a clinical diagnosis of typhoid and instituted typhoid treatment. He gradually grew worse. Widal was made every day. On the twelfth day of the disease it was positive. I now gave one-half c.c. vaccine, pulse being 130, temp. 104. The next day pulse the same, temp. slightly higher. The next day, about the same; I gave a second one-half c.c. vaccine. The next morning temperature fell but rose to 104 during the day. The next day temperature was 101 and the next

day normal, and continued from normal to 100 for three days, then it rose to 102 and I gave another one-half c.c. vaccine. The next day it rose to 103 and the next day fell to 97½ and continued about normal and ended the course of the disease.

Case No. 4. Geo. Witt Sims, aged 5 years. He had been ill ten days when first seen. Temperature 104, pulse 126. Widal negative. Clinical diagnosis typhoid and treatment for same instituted. Two days later, or the 13th day of the disease, Widal positive with temperature 105½, pulse 130. Gave one-half c.c. or two hundred fifty million bacteria. The next day temperature and pulse were practically the same. The second day following vaccine temperature 102, pulse 130. The third day temperature 101½, pulse 110. General condition of patient greatly improved. Temperature continued from 100 to 101 for two days, then began to rise, reaching 103. I gave one-half c.c. vaccine and temperature was 103 the next day. I gave another one-half c.c. vaccine. The next day it dropped to 99½ and never went above 100½ after that, the disease continuing for twenty-four days from the start or eleven after the first dose of vaccine. From the second day following the first dose of vaccine patient was remarkably bright and in splendid general condition.

Case No. 5. F. Ray, girl, aged 4 years. Had been ill ten days when first seen. Temperature 104, pulse 130. Did not make positive clinical diagnosis as it was an atypical case. On the eleventh day Widal was positive. One-half c.c. vaccine given. The next day temperature was 100 and the next day normal, and she had no more fever, temperature above normal and seemed well from then on, or from the third day following the vaccine. This was probably what has been termed an abortive typhoid. We have all known physicians who claimed to have aborted typhoid with calomel or some other simple remedy that most patients get, but which do not stop the disease, and we of course believe this to be a false impression. I am not prepared to say that I think the vaccine cut the course of this case so short. It was probably a case where only a few glands were infected or possibly the intestinal glands were not infected at all but some other organ of the body was the part suffering, though I was unable to prove that to be the case. I assume it was.

Case No. 6. G. M., boy aged 4 years. I saw this case first on the ninth day of the disease. Temperature 103, pulse 120. Widal was negative until the eleventh day, when it was positive with temperature of 105 and pulse of 130. I gave one-half c.c. vaccine on the 12th day of the disease and repeated the dose on the 14th, 16th, and 19th and 22nd days of the disease with absolutely no effect that could be detected. Temperature and pulse ran typical of the severe enteric. Toxemic symptoms severe throughout the disease. Temperature becoming normal on the 27th day of the disease. I have treated two other cases which would be a practical repetition of the above. The cases were treated in 1911 and it is possible that the vaccine was not equal to what it is to-day, or what to my mind is more likely the infection was in each of those cases complicated with the paratyphoid A and B.

One thing noticeable about these cases which I selected to report is the high temperatures early in the course of the disease. I used great care in trying to determine the onset of the disease and believe the days of the disease are correct as given.

I regret that in the above series of cases I am unable to give blood pressure before and after the use of vaccine. I am satisfied, however, that in those cases where a lowering of the temperature was noted there was an improvement in blood pressure, because the most notable improvements were in a brightening of the patient and lessening of all toxic symptoms. I noticed particularly that I began to get results in about thirty-six hours after the injection of the vaccine and that results were marked within forty-eight hours. Unfortunately all the cases in which I have used the vaccine and kept close records have been children. I am unable to report cases of adults. It should also be remembered that no matter how positive the clinical diagnosis I never gave the vaccine until the Widal was positive.

We may sum up as follows:

1. Cases all children.
2. Vaccine never given until Widal was positive.
3. Dose in each case 250,000,000.
4. Effects plainly noticeable in forty-eight hours.
5. No bad effects.
6. Temperature and pulse lowered.
7. Less depression, patient markedly brighter, no hæmorrhage or other complications in any of the cases in which I have used it.
8. Shortening of course of disease possible though I am inclined to believe it only lessens its severity.

The time should soon come when typhoid vaccination shall be compulsory in all schools and places where numbers of people are employed. Then will be the end of typhoid fever.

I cannot close this paper without saying something about diet in typhoid, because in the Medical Clinics of Chicago for November, 1915, which probably many of you read, appeared an article by Dr. Williamson of Chicago. I believe it to be a dangerous article to inexperienced physicians. Here is what he says to feed your typhoid patients during the course of the fever:

Milk, if they like it; eggs, raw, beaten in milk, soft boiled, poached, coddled or omelet; ice cream; cream of wheat, oatmeal or any soft cereal with plenty of cream; soups, not thin "slops" but thick, heavy vegetable soups, as, cream of pea, potato puree, mashed creamed potato; wine jelly, tapioca with fruits; green asparagus tips; cauliflower tips; and he sees no objection to giving sweetbreads and calf's brains.

If he uses that diet there is one thing this man is going to get. That is hæmorrhages. He cannot escape them. He says he has been called out several times to cases of hæmorrhage. We would know that if he had not mentioned it, but he regards it a greater disgrace to have his patients lose twenty-five pounds weight. I have not the slightest fear when I see my typhoid patient lose a little flesh if other conditions are satisfactory, but I have a great horror of hæmorrhage. I have been in two endemics of typhoid and have treated seventy cases. I have been fortunate enough to have hæmorrhage in only one case and that was the case of a man to whom I was called first on

the twenty-first day of the disease, he having been under the care of another physician allowing liberal diet. The other physician was discharged and I was called to the case at one o'clock p. m. I told his wife that he was then bleeding to death. I gave a hypodermic of ergot and morphine and returned to my office for my saline apparatus. When I returned in about one-half hour the bed was full of blood and the mattress was soaked so it ran through on the floor. He died in about three minutes after I reached the house the second time.

I think it was during the years 1901 and 1902 that Dr. H. L. Elsner, physician-in-chief of St. Joseph's Hospital at Syracuse, New York, put every second case of typhoid coming into the hospital on straight milk diet. He put every second one on milk, custard, and strained tapioca. Hæmorrhages were about four to one in those having the more liberal diet. Mortality was also higher but I do not know figures. I believe liberal diet very dangerous except possibly in the hands of the most skillful, and then it is certainly not of enough extra value to equal the extra danger it entails. They tell us there is excessive nitrogen excretion in typhoid so we must feed proteids and immediately say vaccine is of no value because it adds proteids.

My patients get only milk, one tablespoonful of ice cream twice a day and one tablespoonful of gelatine twice a day. I have given liquid peptonoids but failed to see any value from their use and thought my patients showed greater toxemic effects during their use.

Since reporting the above cases I have been treating another case that is interesting in that I did not use typhoid vaccine but Mulford's mixed staphylo-strepto serobacterin.

This patient, a girl aged fourteen years, was first seen on the tenth or possibly twelfth day of the disease. Her temperature was 105 and her pulse 130. I gave one-half c.c. staphylo-strepto serobacterin. The next day temperature was 103½, pulse 130. I gave a second one-half c.c. staphylo-strepto serobacterin. The next day temperature was 101, pulse 126, and all toxic symptoms markedly less. The temperature continued between 100 and 101 for three days when I gave another one-half c.c. of the serobacterin. The next day temperature rose to 102, fell the next day to 100, rose the next day to 102, fell the next day to 100 1-5, the next day to 99 4-5, the next day to normal and never rose above 99 after that. Her pulse and general condition improved with or rather a little ahead of her temperature. This patient was kept strictly on the diet of milk, ice cream, and gelatine, and on August 20th, or thirty days after I first saw her, she had lost only seven pounds in weight. She had no headache after the first dose of serobacterin.

My reason for using serobacterin in this case was that when I first saw her I knew I was dealing with an infection, but it was not at all clear that it was typhoid. By the time I received report on Widal the effect had proven so valuable I continued it.

THE GENERAL PRACTITIONER AND THE TUBERCULOUS PATIENT.*

By ROBERT A. PEERS, M. D., Colfax.

Mr. President and members of the Fresno County Medical Society. Your secretary, in his letter of invitation, requested me to speak to you upon either early diagnosis or the necessity of persistency in treatment when caring for the tuberculous. I thought it would perhaps be better to deal not only with these but also with various other of the problems confronting the general practitioner in the treatment of tuberculosis. Because pulmonary tuberculosis is the form of tuberculosis most frequently met, my remarks will deal exclusively with this type of disease.

The patient with tuberculosis who comes to the specialist for confirmation of diagnosis or for treatment, nearly always comes referred by the general practitioner. He does not apply to the specialist first. If the general practitioner sees the patient early and is keen and capable, the patient's chances for improvement are much enhanced and his stay at the institution shortened materially. If the patient seeks advice late, or if, from faulty diagnosis the nature of his disease is overlooked, the reverse is true. These remarks hold good for the larger number of tuberculous who will not, or cannot, secure the advantage of institutional care. Thus the great burden of correct diagnosis and the care of the tuberculous falls upon the general practitioner and not upon the specialist. Because of this, it is imperative that we should, from time to time, review our knowledge of tuberculosis and endeavor to increase to the utmost our powers of diagnosis and improve our methods of treatment.

The lot of the general practitioner is not an easy one and in his endeavors to secure an early diagnosis and to institute treatment as soon as possible he encounters difficulties other than those which are purely scientific. He is a busy man with but little spare time at his disposal and in the making of an early diagnosis plenty of time is one of the great essentials. Again, he is poorly paid for his time. Only too often there is a "flat rate" fee for office consultations and visits and the patient or his family not infrequently object to paying a sufficient remuneration for the extra time which must be taken. They have come for a tonic or a cough medicine for a patient who is, apparently, merely run down and not only often fail to appreciate the painstaking efforts of the conscientious physician to discover the cause of the "run down" condition or of the cough, but even endeavor to discourage the thought that these symptoms can really be the danger signals of a serious constitutional disorder. Even with the diagnosis of tuberculosis made and the plan of treatment outlined, the physician has difficulty in overcoming the skeptical attitude of his client or the client's family.

But the physician's troubles do not end with the patient and his family. Only too often, it may be

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said to our sorrow and chagrin, he finds opposition from his professional brethren. The patient, not satisfied with the diagnosis, wishing to secure other evidence and anxious to be told there is nothing serious the matter with him, consults another physician. How quickly he believes the other physician who tells him he has merely some trouble in his throat or a bronchitis and "pooh-pooh's" the idea of one so strong looking having any signs of tuberculosis. Such an occurrence is, unfortunately, not rare, and if the patient recovers his former healthy state the conscientious, careful, painstaking physician suffers accordingly. If all such patients recovered, no damage would be done save to the feelings of the careful physician. The reverse is only too true and the patient's "run down" condition becomes worse and sooner or later the diagnosis of tuberculosis is confirmed, perhaps too late to be of benefit to the patient.

I mention these things in passing, because the specialist who sees the patient coming to him late in the disease and with hope for improvement very slim or gone, is inclined, only too frequently, to lay all the blame for the delayed application for treatment at the door of the general practitioner. I mention them also in order to say a word to you to help sustain your faith. These difficulties will arise, they will call forth all your skill, they will cause many a heartache and many bitter thoughts, but, in spite of them, you must be true to yourselves, to your profession and to your clients. They must not cause you to hasten your examination, to underestimate the meaning of the warning symptoms nor to minimize the danger or sidestep the issue when once a diagnosis of tuberculosis is made. Right here I must emphasize the necessity of telling the patient himself that he has tuberculosis. It is not sufficient to tell merely the members of his family. The treatment of tuberculosis requires the active and whole-souled cooperation of the patient, and this can be secured only when the patient realizes exactly the disease he is to fight. If told carefully and tactfully, the diagnosis will not alarm the patient but will stimulate him to assist in the effort made to effect a cure.

It is so easy, when even you may have doubts, and such a great relief to the patient and his family, to assure them that there is no cause for alarm. It saves so much time to write a prescription for a tonic or a cough medicine and is so difficult and time-consuming to order an entire change in the patient's mode of living and outline a regime which will tax the patience and often the faith of the physician, the client and the family. But the tubercle bacillus takes no account of feelings, sympathies or sensibilities. It cannot be bought off by kind words or tender thoughts but can be conquered only by skill, patience and trials.

It is, then, with the idea of reviewing those things which you should know about tuberculosis and to encourage you in the good work you are doing, rather than to attempt to bring before you anything that is new, that I present this paper for your consideration this evening.

In the first place, I would call your attention to some of the more important things in the way of diagnosis, without going into too much detail.

I think that the first mistake that is made in attempting to arrive at a diagnosis is a failure to allow sufficient time for the eliciting of material facts and for examination. Any physician with a proper training and with ordinary diagnostic skill can make a fairly early diagnosis of tuberculosis, if he is in possession of all the facts which should be at his command. He cannot secure these facts relating to history, symptomatology, physical and laboratory findings, without the exercise of patience and tact and the consuming of considerable time. There is no valid excuse for not giving the amount of time necessary. A patient suffering from tuberculosis in a relatively early stage, is not an emergency case demanding immediate attention and if he applies for consultation when the physician's time is taxed to the utmost, he can be given an appointment for some date in the near future when sufficient time can be taken. For this extra time he should pay an extra fee, but whether he pays an extra fee or not, he is entitled to a thorough consideration of his case, or he should be referred to someone who can spare the time. I have given considerable space to what, to some, may seem a very minor detail, because I believe more failures to make proper diagnosis may be traced to haste than to lack of knowledge or skill.

Having made the appointment for examination, a very important aid to diagnosis is a carefully taken and properly recorded history. Such a history will furnish information as to occupations which are such as to lower vitality and predispose to the development of tuberculosis because of long hours, insufficient time for food and recreation, bad hygienic surroundings and faulty modes of living. It will elicit opportunities for infection by the discovery of other cases of tuberculosis with which the patient has come in close contact in the home or otherwise. It will lay bare the patient's medical past and point to previous illnesses which may have been manifestations of tuberculosis unrecognized at the time of illness and which were warning signals of the breakdown which was to follow. A good history will also include a thorough investigation of the train of symptoms which is the incentive that has caused the patient to apply for medical assistance. Upon the facts elicited regarding the past history and the consideration of the present symptomatology may rest the making of a diagnosis much more than upon the findings of the physical examination. For this reason it may be well to state briefly a few of the more important danger signals and symptoms which may help us in arriving at a positive diagnosis.

First as to the danger signals or the past illnesses which are suspicious. We, at Colfax, always consider a history of pleurisy as a pretty positive proof of a tuberculous infection, especially when accompanied by a serous effusion. Likewise a history of malaria is regarded with suspicion if by malaria is meant an illness without frank chills and fever. We immediately inquire if the duration of

the disease was prolonged and if there was an accompanying cough and if the patient lost much weight. We are doubly suspicious if the patient was cured, not by medicine, but as the result of a vacation at the seaside or in the mountains. It has been our experience that more cases of tuberculosis have been wrongly diagnosed as malaria than as any other disease. A history of typhoid or pneumonia is also inquired into and it is remarkable how many so-called cases of typhoid are accompanied by an irregular fever and a cough and night sweats; also how many pneumonias are reported to have dragged over several months. We likewise get the average, the maximum and minimum weights, and, by questioning, learn if the patient is a chronic underweight or if the minimum weight corresponded in time with one of the suspicious illnesses or during a period when the patient was run down and had a cough. Likewise, we ask regarding "clearing of throat" as it has been our experience that most of the cases of definite tuberculosis which we see give a history of an habitual clearing of the throat long before other symptoms arise. This does not, by any means, cover the ground of a well-taken history, but merely indicates a few of the so-called danger signals which are aids to diagnosis.

Now, as to symptomatology. One of the earliest symptoms is a tired feeling—a tendency to get tired after the performance of efforts which once were easily accomplished. This is not always present because active tuberculosis seems at times to occur suddenly and acutely, but, as a rule, the evidence of infection is quite early shown by this tendency to tire easily. It is common in all infections but in acute diseases the other symptoms follow more rapidly than in tuberculosis.

With the tired feeling there is often a loss of weight, but it is really surprising how apparently well nourished a patient may be and how little weight he may lose and yet have tuberculosis advanced far beyond what we would classify as early. But loss of weight is an important symptom and must be given much consideration.

An irregular temperature, a temperature constantly sub-normal, or a temperature above normal, only a few tenths, maybe, especially in the afternoon, are but other evidences of the toxemia of tuberculous infection. Shortness of breath may or may not be present.

Cough and expectoration are later symptoms, as a rule, but are highly significant. Cough and expectoration may be most pronounced in the morning or after eating. It often requires close questioning to elicit the presence of these symptoms. Many patients who cough a few times a day, or even many times a day, will deny having a cough because the cough is not violent and harassing. A slight hack several times a day is not considered by them to be a cough, but must be so considered by us. Women, and sometimes men, often swallow their sputum and will innocently declare that they "never raise anything." Often they claim what they raise comes merely from the nasopharynx.

It is not the history alone or any one of the symptoms alone, but it is a combination of history and symptomatology or a combination of symptoms, which help in diagnosis. It is in the interpretation of the relative value of the facts we elicit in the taking of history and in the compilation of symptoms that experience and judgment find their expression. There may be some excuse for lack of experience or judgment if we fail to make the proper diagnosis, when once the facts are before us, but there can be no excuse for not making the effort to collect the facts.

I shall not attempt to go into the details of the physical examination. I shall merely enunciate a few general principles.

1. Take plenty of time for examination and go over the patient thoroughly.

2. Have the patient in a good light.

3. Have the patient, man or woman, stripped to the waist. No thorough examination of the chest can be made otherwise.

4. In percussion, use only light percussion.

5. In auscultation go over the chest thoroughly. Never consider auscultation complete until you have caused the patient to cough preceding each inspiration.

6. Examine as carefully the chests of supposedly healthy persons who come under your observation as you do those of sick persons. It will give you perspective.

7. Do not expect many physical signs in the early tuberculous. If you find them the case is not early; it is advanced.

Now a few rules as to laboratory, the X-ray and tuberculin:

1. Always examine the sputum. If negative examine again. Always get a morning specimen and instruct the patient to bring it from "deep down." Endeavor to get a positive specimen if possible, but do not allow your laboratory report to outweigh your other evidence as shown by the history, the symptoms and the physical examination.

2. The X-ray is a valuable aid but its findings should be interpreted by an expert. The evidence discovered by the X-ray examination will be of value in proportion to the experience and wisdom of the interpreter.

3. Tuberculin is also an aid to diagnosis, particularly in the young, but, like the sputum examination, must not be allowed to outweigh other evidence. A sputum examination is of value principally when the report is positive; a tuberculin test is of value principally when it is repeatedly negative. Tuberculin, to be of value for diagnostic purposes, should be freshly diluted.

In addition to diagnosis, I should like to touch upon what is, to me, the most striking clinical feature of tuberculosis. I think that too much emphasis cannot be given this particular phase of our subject, because, unless it is fully appreciated, it is not possible to treat tuberculous patients successfully. I refer to the tendency of the tuber-

culous to remissions and exacerbations. All patients exhibit, during the course of the disease, these alternating periods of improvement and periods marked by increase of symptoms. The "danger signals," so-called, already referred to, are usually exacerbations and the long intervening periods of well-being merely remissions.

After the disease becomes definitely recognized as tuberculosis, the "good spells" and "bad spells" continue as before, with the exception that they are now of shorter duration with a tendency towards exacerbation more than remission. As the patient overcomes his disease and progresses toward an arrest of his tuberculous process, the reverse is the rule and the good spells lengthen and become more marked, while the bad spells become fewer and less severe. Until the patient comes to realize that he is suffering from tuberculosis and that the bad spells from which he suffers are but exacerbations of his disease, he will refer to the occurrence of an increase of symptoms as due to "catching cold" a "bilious attack," an "attack of malaria" and so on, ascribing his condition to catching cold if the increase of symptoms is marked particularly by extra cough and expectoration, or to biliousness, if there are gastro-intestinal symptoms or to malaria if the most marked symptoms are malaise accompanied by a rise of temperature.

As I stated above, this clinical feature of tuberculosis must be thoroughly appreciated if we are to treat the tuberculous patient successfully. Otherwise, there will be exhibited by the patient and his physician, an unwarranted optimism when the cough diminishes, the temperature drops and other signs of improvement appear, while there will be a corresponding pessimism when the opposite occurs. Again, as the patient gradually secures an arrest of his disease, when for weeks he may have had a normal temperature and be up to normal weight, there is liable to be a too early return to work or too great liberty allowed in the patient's recreations, unless such good symptoms are treated merely as remissions until all danger of an exacerbation is past. It is a lack of knowledge of these facts or a failure to appreciate their full meaning, which is responsible, usually, for the failure to keep up treatment long enough to secure permanent good results with tuberculous patients.

Various theories have been advanced to explain these phenomena, but probably none is satisfactory. Perhaps none is needed, if we have the patience and tact to insist upon eternal vigilance and unrelenting observance of the rules of hygiene, while at the same time we possess the judgment to interpret at their proper values the significance of these recurring tides of symptoms, which alternately buoy up our hopes or depress us.

Before closing, I wish also to touch on treatment. I am not going to outline for you in detail the treatment of the tuberculous. I wish to speak merely of a few of the more important phases of treatment which I think may be reviewed with value. There are two points where the general practitioner most frequently falls down when it comes to treatment. The first is he does not lay sufficient emphasis upon rest, and the second is he gives tuberculin in too large doses.

First as to rest: The most important single thing in the treatment of tuberculosis during the active stage, is rest. Patients with fever should be placed in bed and kept there until the temperature is normal all day and every day. This means that the temperature must come down below 99° and stay there. This means weeks, and frequently months, spent in bed before the temperature drops to normal. It should make no difference in your treatment how long it takes because your febrile tuberculous patient will not get well unless he is sent to bed and kept there. This seems to be the main fact regarding treatment not yet appreciated by the general practitioner. Because of this lack of appreciation, we are seeing patients daily who have been running a temperature for weeks or months and who have not been put to bed or who have been kept in bed merely in the afternoons. Only rarely do we encounter such a patient who has been advised to exercise. A few physicians apparently have not yet learned that exercise is bad for the febrile tuberculous patient, but they are becoming more scarce day by day. But there are still many who have failed as yet to learn the lesson of rest in bed. Put your patient in bed, serve his meals in bed and do not let him up until his temperature has been normal for days. This is a difficult thing to do in the home; it is fairly easy to do in an institution because the patient can see the beneficial effects in others who are recovering because of rest. In the home the patient does not get the encouragement which comes from seeing many other patients doing the same things as he does, and for this reason the patience and tact of the physician, treating the patient in the home, must be greater.

Now as to tuberculin. Tuberculin is a valuable aid to treatment but when used by the average physician it is given in too large doses. This is due, largely, I think, to the custom of using the commercial dilutions, commencing with dilution No. 1 and going up. Dilution No. 1 contains .01 mgm. to the c.c. and as the commencing dose is one-tenth of one c.c., the patient gets .001 mgm. as the initial dose. This is altogether too large a dose to commence with. We commence with .00001 mgm. to .000001 mgm. Another thing to remember is to refrain from using tuberculin if the temperature is 100° F. or over. There is nothing more sad than to have an advanced patient apply for relief and to learn that though under observation by a physician for many months, he has not been put to bed but has been going twice a week to a doctor's office for a "shot" of tuberculin. We use tuberculin in our institution and we use it because we believe it to be valuable, but we use it in afebrile cases. And when it comes to a matter of relative values, I would not exchange a month's rest in bed for all the tuberculin in existence.

As stated above, I am not attempting to outline the treatment of the tuberculous, but merely to speak of a few of the more important points which I think need to be emphasized. This brings us

to the matter of treatment during convalescence. There is no time in the course of the treatment of the tuberculous when more skill and good judgment is required than during convalescence. I would again warn you not to forget the occurrence of remissions and exacerbations. The patient and his physicians must not allow the occurrence of what may be a long remission to deceive them into believing that a cure has been accomplished. Neither should a slight exacerbation cause them to think that all the months of care and patience have been wasted. As the patient gets well the remissions become longer and more marked, while the bad spells diminish in frequency and intensity.

When the temperature has been normal for a week or more, the patient is allowed up an hour a day unless there are contra-indications, such as a too rapid pulse or great emaciation. Gradually the time up is increased, and, after some weeks, exercise, in the form of walking, is allowed. This is increased as the patient's improvement permits. Here, again, judgment and experience are the greatest aids a physician can possess. The observant physician soon learns that no two patients can be treated alike. He also learns that he must see his patient often and over a long period of time in order to correctly judge his capabilities and resistance. We see our patients at least five times per week, and often daily, over a period of months. At each visit the patient's record is carefully studied. It is in this way, and in this way alone, that we determine just what course shall be pursued with each individual patient.

And this brings up again the matter of time. Time is the great healer of the tuberculous. It is a disease not of days and weeks, but of months and years. We have yet no short cut to cure for tuberculosis. The patient who is willing to devote from six to twelve months or more of his life to getting well, can get well, but he who is looking for a quick cure can be sure of one thing, —he will be disappointed. The cost of getting well is often prohibitive and many persons die in our state each year from tuberculosis for no other reason than that they cannot buy health. This should stimulate us to work for state care for the tuberculous so that patients can be furnished time to get well.

After the patient is able to return to work, what shall he do? This is the question often asked the family physician. Shall he return home or shall he stay in the mountains? Shall he return to his former occupation or shall he take up some light out-door work?

We have one answer to the question of where to live after one has become well enough to return to work. That answer is: "It is not so much *where* you live, as *how* you live." For many months a patient must spend the entire time when not working in bed. Always we advise patients to return home immediately the day's work is done. Often we advise him to go to bed and have his evening meal served in bed. If this is not possible he should retire immediately after his evening meal and stay there until time to get up for breakfast. Sundays should become "days of rest" in the full sense of the term. This may seem unnecessarily strict but the value of such advice is borne out by experience. If possible, the patient should sleep out of doors. He should eat plenty of good food and should keep up his weight. In short, he should follow out, as nearly as possible, the careful regime of the earlier days of treatment. He should take his temperature often and should weigh frequently, not from a morbid interest in his disease, but for the same reason that the merchant or the corporation employs accountants to point out any falling off of business. Truly getting well from tuberculosis is a business to be followed out on business principles. It is necessary to take, frequently, stock of one's resources and gains and to be able to know one's limitations and the sources of one's losses. To live right is more important than to have the right location.

Next, what shall be the occupation? Whenever possible, it should be the one to which the patient is most accustomed and the one which he can follow with the least possible strain. Many indoor positions are more suitable than outdoor occupations, because less strenuous and trying. The occupation to which one is accustomed is the one to which he should return unless there is some positive contra-indication such as too long hours and the impossibility of securing sufficient rest. The problem of the mother of a family with many household and domestic cares, is, perhaps, the most trying one. Here it is necessary to secure sufficient help in the home to help lighten the burdens. The head of almost any household can see the value of spending money for help in the house rather than for doctors and institutional care. The position of those unable to pay for such help is truly pitiable.

In closing I shall, merely for sake of emphasis, review some of the points I have tried to bring out in this short and incomplete paper.

1. Give plenty of time for diagnosis.

2. The diagnosis once made should be truthfully and tactfully made known to the patient. In no other way can his complete cooperation be obtained.

3. We must bear in mind the occurrence of remissions and exacerbations during the course of tuberculosis if we hope to treat the tuberculous successfully.

4. The most important factor in treatment of active tuberculosis is rest.

5. In discharging a patient it is more important to know *how* he is going to live than *where* he is going to live.

6. Discharged patients should return to their former occupations unless there are very distinct contra-indications to so doing.

MEDICAL INSPECTION OF PRISONERS AT SAN QUENTIN WITH REPORT OF CASE OF TINEA VERSICOLOR.

By L. L. STANLEY, M. D., San Quentin.

Each prisoner upon entering San Quentin prison is subjected to a thorough physical examination. As soon as he enters he is taken to the turnkey's office, properly registered, and instructed as to his privileges and requirements. After a bath, a shave, and a cropping of the hair he is taken to the Bertillon room, where his physical measurements are tabulated, as well as any scars, deformities, birthmarks and the imprints of the palmar surfaces of his thumbs and fingers. His face is photographed both from in front and laterally for records of identification.

At the hospital, where the prisoner next goes, a complete medical history is taken by one of the physicians who are serving sentences. This history begins with date, age, occupation, weight, family encumbrence, and length of sentence. The family history has to do with the health, drug and alcoholic addictions, sanity, tuberculous and malignant tendencies of both maternal and paternal sides. The health of the brothers and sisters, with notes of family deaths, is carefully recorded.

The past history of the convict embraces childhood diseases, infections, accidents, venereal troubles, stomach and bowel disturbances, nervous peculiarities and all affections of the heart and lungs. Alcoholic, drug and tobacco addictions are written down.

The physical examination is dictated by one of the prison physicians to a scribe who places it on the history blank. The examination starts with the noting of the condition of the head, its scars, deformities and peculiarities. The color and size of the ears and hearing ability are noted. The eye examination includes the color of the conjuctivæ and scleræ, equality of pupils and their reaction to light and accommodation. The air spaces, spurs and septal deflections of the nose are noted. The condition of the lips, teeth, gums, tongue, tonsils and pharynx is carefully inspected.

Glandular enlargements, abnormal pulsations, hyperthyrea and muscular condition of the neck is examined in turn. The chest is inspected, palpated, percussed and auscultated during normal breathing and by holding the breath and coughing. The heart measurements are taken, pulse rate, rythm and murmurs, if any, noted.

Posteriorly the lungs receive the same examination, stress being laid on the clearness of the bases and apices.

The area of liver dullness and the percussability of the spleen are included in the examination of the abdomen.

The external genitals are carefully examined for acute infections, varicocele, hernias and other affections of this region. Note is made of the musculature of the legs and arms, tendencies to arteriosclerosis and varicosities.

Reflexes and glandular enlargements are ascertained.

During all this examination, if there be any remediable defects, such as enlarged tonsils, deflected septum, hernia, varicocele, etc., such defect is recorded in the "Operation Book," and the prisoner advised that he will be called at an early date for the necessary operation if he so desires.

Upon completion of the examination a signed statement of the prisoner's physical condition is sent to the Captain of the Yard, who has charge of the detailment of the men to their work. Recommendations are made by the physician as to the kind of work the physical condition will allow. No man is assigned to duty in the jute mill who has epileptic fits, tuberculous tendencies, eye affections or physical deformities which contraindicate such work.

When it is realized that approximately three prisoners enter San Quentin prison every day, it is obvious that many interesting cases come before the medical directors.

The accompanying photograph shows some peculiar skin markings of a convict who came to the prison in February, 1913. Upon being stripped, a brownish, somewhat elevated discoloration was noticed covering the upper part of the thorax and the upper part of the abdomen as well as about the genitals. Extending in a band eight c.m. in width across the chest just above the nipples and around on to the back and at right

angle over the right shoulder, simulating Sayre's bandage, was an area almost entirely devoid of this pigmentation and presenting almost entirely normal skin.

Patient's family history not applicable to case—age 50 years, married, real estate broker, weight 194 lbs., previous health good. Gonorrhœa 30 years ago, no syphilis, moderate drinker and smoker. Has been troubled with constipation and hemorrhoids. History otherwise negative.

Present history—Prisoner had never noticed pigmentations of his skin before, and had not had any itching or other trouble to direct his attention to the skin. He was surprised at his markings when attention was attracted to them, but declared he had never worn tight-fitting clothing or been supported by braces. On close questioning, however, he remembered in April, 1912, nine months before, he had dislocated his right shoulder. Adhesive plaster had been applied about his chest, back and shoulders, but on account of its irritability it was removed within forty-eight hours.

For three months the patient had been confined in a county jail before coming to San Quentin.

Physical examination showed patient normal in other respects.

A portion of the brownish skin was scraped off and mounted with 10% sol. of sodium hydroxide. With 1/6 objective, the mycelia were plainly visible substantiating the diagnosis of Tinea versicolor.

In order to prove the curative power of adhesive plaster in this condition, strips of ordinary plaster were placed over areas where the tinea was thickest. These strips were left on 24 and 48 hours respectively. On removing the first one the skin appeared to be normal and some of the brownish discoloration remained on the plaster. A few patches subsequently reappeared in this area.

The second strip applied for 48 hours has permanently cured the disease over the area on which it was applied.

One area where it was impracticable to apply adhesive a 12% solution of sodium hyposulphite was applied several nights in succession. This succeeded in curing the disease.

A CASE OF HEMOGLOBINURIA.

By NORMAN E. WILLIAMSON, M. D.,
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The following case of hemoglobinuria presents some points of interest aside from the rarity of the condition here.

E. F. W., age 46, born in Boston, Mass., occupation, guard, P. P. I. Exposition. First seen March 9, 1916. Patient complains of highly colored urine, which he first noticed two days before, accompanied by severe repeated vomiting. Has not been feeling well for two weeks, having had "flashes" of fever, insomnia, and anorexia.

Father died at 46 of tuberculosis; mother at 56 of rheumatism. Two sisters, one of whom died of measles, and the other of childbirth. One brother, alive and well at 54.

In early childhood patient had whooping cough, diphtheria, measles, scarlet fever and mumps. Had epilepsy with attacks every three or four months up to the age of 13, and none since. Pneumonia 20 years ago. Typhoid in 1896. Went south first in the army in 1898, and had repeated attacks of malaria in Florida. Went to Manila in 1899 and had no malaria till 1906, when an attack kept him in the hospital for a month. From that time he had no known attacks of malaria, nor any other illness to the present time, except gonorrhœa in 1911. Never had syphilis. Came to San Francisco from Manila, December, 1914, and has never left the city since, even for a trip. Has taken no medicine.

The patient is a well-built, rugged-looking man, weighing 185 lbs. Face flushed. Sclera faintly yellow. Temperature 99.2°. Pulse 72. Blood pressure, systolic 138, diastolic 85. Chest negative. Spleen not palpable or tender. Liver, normal. Slight tenderness on deep palpation over left kidney and bladder. Urinates frequently, and has slight burning sensation on urination.

Urine. Reaction, strongly acid; specific gravity 1010. Albumin by nitric acid layer test +++. Turbid. Yellowish-red by transmitted light; reddish-brown by reflected light. On standing there is a light brown flocculent sediment. On centrifugation of the fresh specimen there is 3% of brownish-black compact sediment, and a brown clear fluid. Microscopically, the sediment is nearly all amorphous brown material, with a very few red cells, leucocytes and epithelial cells. Negative for B. Tuberculosis. The blood does not show any parasites of malaria or pigment in the fresh spread or in the layer beneath the leukocytes in the centrifugated specimen. (Bass method) 2cc. of blood were added directly to 5cc. of citrated salt solution and centrifugated. The clear supernatant fluid showed a color, as viewed through a test tube, 16mm. in diameter, estimated as 15% by comparison with the Tallquist scale.

The stool was negative for ova of animal parasites. The complement fixation test, performed by Clegg in the Public Health Service Laboratory, was negative, both with Wassermann and Noguchi antigens. The blood for this test was drawn March 13. At the same time 1cc. of blood was added to 5cc. of citrated salt solution and centrifugated. the supernatant fluid was of a pale straw color. No malarial pigment was found on examination of the leucocyte layer. The specimen was shaken and left for 24 hrs. at room temperature. No hemolysis occurred.

The urine improved slowly, changing in color to yellow by March 16. Hemoglobin derivatives were shown by Heller's test till March 25, and by the benzidine test on the next day. Casts of brown amorphous material appeared, and on the 21st there was an increase of red cells. Albumen was found daily by the nitric acid layer test till March 27, when this test was negative.

Blood examination following admission showed: red blood cells 4,000,000. Hemoglobin (Tallquist, 65%. Leucocytes 6000. Slight poikilocytosis with shadows. No nucleated reds.

Polymorphonuclear neutrophiles	63%
Large mononuclear	19%
Lymphocytes	7%
Transitional	3%
Neutrophile myelocytes	4%
Polynuclear eosinophiles	4%

On the next day the hemoglobin was 55%. Two days later the results were as follows: red cells, 4,300,000; hemoglobin 55%.

Polymorphonuclear neutrophiles	62.5%
Large mononuclear	13.5%
Lymphocytes	19.5%
Transitional	1.5%
Neutrophile myelocytes	1.5%
Polynuclear eosinophiles	1.0%
Mast cells	0.5%

On the 23d the hemoglobin was 68%; red cells, 4,600,000. The patient lost 18.5 lbs. during the first 11 days, and gained a half a pound in the next week.

There was no history in this case of the ingestion of any of the various drugs and chemicals which can produce hemolysis. The patient had taken no medicine, and no one living in the same house was ill. He had eaten no mushrooms. There was no history of exposure to cold. Burns, snake bites and Raynaud's disease can be excluded.

Justus showed that hemolysis occurred in certain cases of syphilis, and that the serum might be red in such cases when drawn from a vein and separated. He caused hemolysis in syphilitics by intramuscular or intravenous injections of mercury. Murri showed that 90% of cases of paroxymal hemoglobinuria had syphilitic history, and that the attacks could be induced by a chill. Cooke stated that syphilis is the most important, if not only, cause for paroxymal hemoglobinuria. Syphilis is excluded in this case by the history, physical examination and negative complement fixation tests.

Tropical black water fever remains for consideration. This patient had had a prolonged tropical residence. He had attacks of malaria in 1898 and again in 1906. At the time of examination no malarial parasites could be found, but, according to the history he had passed highly colored urine for 48 hours. Parasites disappear inside of 48 hours in black water fever, as any of us who have had experience with the disease can testify. The infected corpuscles are the first to be broken up, and a patient may be free from malaria for some time after an attack of black water fever. The patient, however, was not pigmented, and showed no splenic enlargement or tenderness. No pigment could be found in the leucocytes. There was a low leucocyte count, 6000, which would correspond to the usual finding in malaria. Hemoglobinuria may be accompanied by leucocytosis.

Rogers first noted the increase of large mononuclears in malaria. Houston stated that large mononuclear increase was present also in splenic enlargement, some acute septic conditions, some cases of chlorosis and the anemia of typhoid. Stevens and Christopher state that an increase of 15% of large mononuclears means actual or recent malarial infection, and that an increase of 20% is accompanied by parasites and pigment in the blood.

Taking 3% to 5% as the normal proportion of large mononuclears there was an increase of 14% in the first count made. This dropped in two more days to an excess of 8½%. In the absence of the other conditions mentioned by Houston, this is strongly suggestive of a recent attack of malaria. The symptoms of malaria, especially of the estivo-autumnal form, may be very slight, and the patient complained of indisposition for two weeks before the attack of hemoglobinuria. Malaria often recurs in the north when it had been latent for some time before leaving the tropics. No new infection could have occurred here, as the patient had not been outside of San Francisco, and Anopheles are not present here.

According to Koch, Plehn and others quinine is a cause of black water fever in infected individuals. According to Stevens and Christopher, five grains of quinine may induce an attack when given to an infected individual. All cases are not so caused, however. I have treated patients with large doses of quinine through repeated severe attacks of malaria, and the same case has subsequently developed black water fever. In many cases quinine given during the disease does not seem to alter its course. Taking of quinine is so nearly universal in the tropics, especially when indisposed, that it is rare to find a patient with black water fever who has not taken quinine. This case had had no quinine.

The urine differed in no way from those seen in many cases of hemoglobinuric fever seen in Panama by the author. I consider that the weight of evidence is in favor of this diagnosis.

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Book Reviews

The Medical Clinics of Chicago. Volume II, Number 6 (May, 1917). Octavo of 252 pages, 46 illustrations. Philadelphia and London: W. B. Saunders Company, 1917. Published bi-monthly. Price per year: Paper, $8.00; cloth, $12.00.

General Surgery. Edited by Albert J. Ochsner. Vol. 2 of Practical Medicine Series for 1917. Pp. 608. Chicago: Yearbook Publishers. 1917. Price $2.00.

Internal Secretions; their physiology and application to pathology. By E. Gley. Translated from the French and edited by Maurice Fishberg. Pp. 241. New York: Paul Hoeber. 1917. Cloth, $2.00.

This little book is an effort to condense the present status of the theory of internal secretions into a small work intended for the busy practitioner. In reading it through, the latter should be prepared for a very general, somewhat advanced presentation of the subject, which presupposes considerable fundamental knowledge. Perhaps its most glaring fault is the almost entire disregard which is paid to the actions of the hypophysis. As a single work on the subject of the internal secretions it is not to be compared with either Biedl or de Sajous. H. F. A.

Mechanisms of Character Formation. An introduction to psycho-analysis. By William A. White. New York: Macmillan. 1916. Price $1.75.

This is a very serious book dealing with the application of the Freudian theories and psycho-analysis to every-day life. Its chapters deal with the genetic approach to the problem of consciousness, symbolism, family romance, the will to power, and many similar abstruse considerations. It is an excellent work for those who are interested in psychic problems, but rather beyond the comprehension of the average doctor. However, a greater familiarity with these phases of medicine would be extremely helpful to the average practitioner. S. T. P.

Diagnosis from Ocular Symptoms. By Matthias Lanckton Foster. New York: Rebman Company. 1917.

This book will prove of interest mainly to the teacher of ophthalmology looking for an outline of important clinical points to present to his students, or to the student himself to supplement literature. The main lesions of the eye and their significance are discussed in simple manner, but with excellent clinical judgment. The unessentials are disregarded. It would be a good book for the general medical man to possess as it gives short and well put clinical facts and discussions of important eye lesions. H. B.

Venesection. Brief summary of the practical value of venesection in disease. By Walton Forest Dutton. Philadelphia: Davis. 1916. Price $2.50.

It is undoubtedly true that venesection is a neglected form of treatment and is applicable in many disease conditions. The past history of this useful procedure has been well written by medical authorities long since dead.

It still remains for some modern author to deal adequately with the topic. The book above mentioned probably is a serious effort to do this, but it fails woefully to come up to any modern scientific standard. It deals with venesection as a treatment to many diseases, such as angina pectoris, beriberi, yellow fever, migraine, etc. But an author who can state that "rheumatism is a constitutional disease, the cause of which has not been determined, and that it may be acute or chronic," is hardly to be taken seriously, even should he recommend venesection. Even the illustrations in the book, which are undoubtedly taken from some antiquated instrument catalog, are more amusing than illuminating. Therefore we can only recommend the book as one to skim over and pick out such suggestions as may stimulate further investigation and more accurate clinical observation.

S. T. P.

Pulmonary Tuberculosis. A handbook for students. By Edward O. Otis. Boston: W. M. Leonard. 1917.

This little book should fill quite a want in our library of tuberculosis. It adds nothing new, but presents the subject in condensed form from the viewpoints of a teacher of many years' experience. The book is rather a compendium on tuberculosis and is written and planned for the medical student primarily.

The chapters upon prognosis, prophylaxis and marriage and tuberculosis deserve special mention. The intelligent co-operation of the patient as affecting his recovery is emphasized, a point much to be commended.

The numerous conditions which produce tuberculosis, beginning with childhood infection; the strengthening of natural resistance in young adult life; the prevention of active tuberculosis from latent infection; the improvement of working and housing conditions, are impressed upon the reader.

Finally, the author does not absolutely forbid marriage between tuberculars, but warns against a woman bearing a child until two years after the disease has been arrested, and then only if her status in life is such that no great demands are made upon her strength. Under these conditions a healthy child may be reared. An arrested tuberculous male may marry if his responsibilities are not too burdensome.

As a practical abridged sketch of the entire subject of pulmonary tuberculosis, this book can be recommended to students of medicine.

W. C. V.

Clinical Tuberculosis. By F. M. Pottenger. With a chaper on laboratory methods by J. E. Pottenger. 2 volumes. St. Louis: Mosby, 1917. Price $12.00.

These two large volumes on tuberculosis view the subject from the standpoint of pathological anatomy, pathological physiology, diagnosis, prognosis, complications and treatment. They may be used for reference on certain subjects of special interest or for more extended reading. Each chapter is very complete in itself, and this, I believe, is one of the strong points in favor of this work compared with many where it is necessary to spend much time referring to other chapters. Each section is conscientiously and fully covered and supplemented by many charts, diagrams and X-ray photographs.

The writer, among other things, has gone considerably into detail in regard to the part played in clinical tuberculosis by the vegetative nervous system. As he admits, that system does not account for all the signs and symptoms, but he has carefully described and elaborated the possibilities.

The pathological anatomy and physiology of the infection is traced from its appearance in childhood though its often latent period to the active disease of adult life. By carefully understanding the transition an early diagnosis is more often made than would otherwise be possible. Considerable attention is paid to these early signs and symptoms and their importance.

The complications of tuberculosis cover a very large field and different methods of treating them is of importance to all of us.

In conclusion, these volumes of Pottenger's, divided as they are into small chapters, make very interesting and instructive reading for reference as well as study and in these 1400 pages all different aspects of the disease are considered and thoroughly discussed. P. H. P.

A Text-Book on the Practice of Gynecology. For Practitioners and Students. By W. Easterly Ashton, M. D., LL. D., Professor of Gynecology in Graduate School of Medicine of the University of Pennsylvania. Sixth Edition, thoroughly revised. Octavo of 1097 pages with 1052 original line drawings. Philadelphia and London: W. B. Saunders Company, 1916. Cloth, $6.50 net; half morocco, $8.00 net.

The sixth edition of this very complete gynecology will be an especially welcome addition to the library of the young practitioner. The changes are many, including not only treatment, conservative and operative, but also bacteriology and pathology. Into a book of 1100 pages is crowded not only the specialty of gynecology, but also chapters on intestinal surgery and kidney surgery. One wonders a little—why not go on to gall-bladder surgery? However, the author probably does attempt to remind one that it is necessary to be a general surgeon before becoming a gynecologist. This must be continually emphasized, for one still sees the abdomen opened for a simple suspension and the gall stones left intact, not even palpated.

The chapter on cancer of the uterus is decisive and the procrastinating medical man is prodded to immediate diagnosis. Description and pictures are so complete that the mind absorbs all the details without effort. The author leaves not the slightest detail to the imagination. This, while a little irksome to the experienced man, is all the more valuable to the young practitioner. In this book he will find many happy suggestions. As in a reference book, each condition being treated in full and systematic fashion, no time is wasted in hunting through other pages. The young doctor beginning to teach will find this book especially excel-

lent, as it emphasizes the small details so valuable to the student and too often taken for granted by the general instructor. Treatment is complete, with chapters on hydrotherapy, X-ray, diet and saline injections. At first glance one misses the halftones of other books, but the drawings prove very satisfactory.

Altogether the book can be well accorded a place in the well-equipped medical library.

M. I. J.

Post-Mortem Examinations. By William S. Wadsworth, M. D., Coroner's Physician of Philadelphia. Octavo volume of 598 pages, with 304 original illustrations. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $6.00 net; Half Morocco, $7.50 net.

The author, as stated in his preface, has based his book and his illustrations on his personal experience and thought, which covers a period of sixteen years and an observation of more than four thousand post-mortems. He states, at the outset, his purpose to try to encourage a more scientific and thoughtful study of the human body on the part of the post-mortem surgeons, and to stimulate higher ethical standards and a broader view, which is offered those engaged in this profession. The book as a whole is well gotten up and orderly in the arrangement of its contents. The topics are well outlined and indexed. The reading matter, from cover to cover, reveals a passion on the part of the author to remodel or revise some of the present post-mortem methods and customs. His criticisms of the technic and practices of some of the present day post-mortem surgeons is at times severe. Especially does he criticize the careless worker, also those who methodically follow a set routine, particularly the students of Virchow.

However, in spite of tendency to criticise, he, himself, occasionally drops into the straits from which he would warn others; as, for instance, his constant reminder that one should search for facts based on direct evidence rather than on notion or biased statement, seems somewhat vitiated by such statements as appear on page 67, in the section on hair, where the following appears: "The association of red hair of a deep brownish copper type with blood vessel disease is most striking. I have come to speak of this type as hemic hair. The coarse sparse hair of gastritis and the fine buff colored hair of old liver degeneration are very characteristic." Personally I have never seen or heard of such associations, but this may be due to lack of observation on my part.

It seems the book is so full of detail, that it should in a general way belong to an anatomical dissecting room, rather than for use in the average run of post-mortems where the operator's time is quite limited by the various demands, of undertakers, friends and relatives, etc., which interfere with careful lengthy dissections of any but the particular parts involved. The book also carries one afield somewhat into the realms of physics, chemistry, physiology and anatomy, probably more than is indicated under the present title.

In general, there is much that can be obtained by way of the author's personal experience and suggestion that would be helpful to anyone interested in post-mortem work. I consider his chapters on Phenomena of Death (Part 1), Mortuaries (Part 2), Examination of the Body (Part 3), and Medico-Legal Post-Mortems (Part 5), quite interesting, instructive and worth while. E. W. S.

State Society Notes

IMPORTANT NOTICE—TO CONTRIBUTING MEMBERS OF THE INDEMNITY DEFENSE FUND.

Notes are now becoming due.

Do not let your membership lapse.

Each member will be informed ten days in advance of the due date of his note.

DEFENSE AFFORDED ONLY TO MEMBERS WHOSE DUES ARE KEPT FULLY PAID.

Medical Defense Rules, Section 3: "Dues must be paid to the Secretary of the County Medical Society to which each member belongs prior to the end of February of each year. Any member whose dues are not paid prior to March 1st and whose name is not reported as having paid his dues by the Secretary of his County Medical Society is dropped from the list of members in good standing as of January 1st of such year, and such member is deprived of Medical Defense afforded by the State Society for the period from January 1st of such year to the date when his assessment is received by the State Society. Members whose assessments are not received on or before February 15th of each year will be notified by letter from the Secretary of the State Society of such fact."

At a recent meeting of the Council of the Medical Society of the State of California, the question was raised as to what stand the insurance companies had taken on the matter of service in the Medical Section of the Officers' Reserve Corps in the present war. Dr. Pope, State Secretary, is investigating the matter of insurance rates, recent rulings, if any, and what provisions are made for physicians in the present crisis. A resumé of this inquiry will be furnished in the near future.

NOTICE.

Information has come in the possession of the Police Department of San Francisco to the effect that a middle-aged German woman has been going the rounds of the doctors' offices offering for sale a mouthpiece attachment for the telephone, also a memorandum pad to attach to the telephone, both of which are said to be laden with disease germs of some description. Should any physician come in contact with this woman, he should detain her on some pretext and notify the police.

County Societies

CONTRA COSTA COUNTY.

The Contra Costa County Medical Society met in regular monthly meeting at the residence of Dr. Marguerite Deininger-Keser, Saturday night, June 30. The minutes of the previous meeting were read and approved. There was no unfinished business to come before the meeting.

A letter from the Editor of the Journal was read, in which it was stated that an associate editor from the County Society be elected. A motion was regularly moved and seconded that Dr. U. S. Abbott be elected associate editor of the State Journal in Contra Costa County. The motion was carried.

A motion was regularly made and seconded that the President appoint a committee of three members to draft resolutions to protect the doctors' practices while away during the period of the war. The motion was carried. Other communications were read.

Dr. Jas. T. Watkins of San Francisco gave a very interesting talk with lantern slide illustrations on the subject "Injuries and Deformities of the Upper End of the Femur." This was an unusually interesting talk and freely discussed by the members present.

Dr. L. A. Martin of Oakland gave us a very interesting talk on X-ray work.

At the conclusion of the regular program Dr. Keser served a very pretty luncheon, for which she was given a vote of thanks.

Those present were: Dr. P. C. Campbell, Richmond, President of the Society; Dr. H. L. Carpenter, Richmond; Dr. C. R. Blake, Richmond; Dr. W. E. Cunningham, Richmond; Dr. U. S. Abbott, Richmond; Dr. M. Deininger-Keser, Richmond; Dr. W. W. Frazer, Richmond; Dr. H. N. Belgum, Richmond; Dr. C. R. Leech, Walnut Creek, Vice-President of the Society; Dr. G. O'Malley, Crockett; Dr. M. L. Fernandez, Pinole; Dr. W. S. George, Antioch; Dr. Moore, Antioch; Dr. J. T. Breneman, El Cerrito; Dr. F. F. Neff, Concord.

U. S. ABBOTT, Secretary.

SACRAMENTO SOCIETY.

The regular monthly meeting of the Sacramento Society for Medical Improvement was held Tuesday evening, June 19, 1917, at the Hotel Sacramento.

The following program was presented:

Cases reported: Dr. Zimmerman presented X-ray plates of Transposed Heart, and Foreign Body in the Lung. Dr. Gundrum reported a case of Cerebro-Spinal Meningitis, and demonstrated an unusual fever chart for this disease. Dr. Rulison reported a case of Laryngeal Diphtheria, complicated by an Emphysema. Dr. Pitts reported a case of Congenital Heart Disease.

Paper of the evening: Artificial Pneumothorax. Discussion was opened by Dr. Kirkwood of Alta. Discussion continued by Dr. R. A. Peers, Dr. Bush of Colfax, and Dr. Gundrum. Discussion closed by Dr. Howard.

Report of the Board of Directors was read.

Meeting adjourned.

W. A. BEATTIE, Secretary.

SAN FRANCISCO COUNTY.

At a special meeting of the Board of Directors, held on June 28th, the following resolution was adopted:

"Resolved, That the members of the San Francisco County Medical Society as a whole, when called upon to treat persons who are patients of physicians who have given up their practice for the purpose of entering military service during the present war, will render such services as may be required and collect the usual fees, one-third of which amount collected will be immediately forwarded to the family or proper representative of the above mentioned medical officer. Be it further understood that this shall be done whether or not the absent medical officer shall have stipulated to whom the patient shall be referred; be it further

"Resolved, to the end that each member of the San Francisco County Medical Society may have an opportunity of verifying this action, that the Secretary of the Society shall transmit to each member for his signature the following:

"'I hereby subscribe to and agree to abide by the provisions of that Resolution of the Board of Directors of the San Francisco County Medical Society providing that I shall transmit to the family or proper representative one-third of all fees received from patients of medical officers who have given up their practice to enter military service.'"

RENÉ BINE, Secretary.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the home of Dr. J. P. Sargent at Lodi Friday evening, June 29th. The meeting was called to order by first vice-president R. T. McGurk. Those present were Drs. E. A. Arthur, B. F. Walker, R. T. McGurk, W. T. McNeil, J. T. Davison, Margaret Smyth, Minerva Goodman, Hudson Smythe, S. R. Arthur, J. E. Nelson, A. M. Tower, E. B. Todd, J. P. Sargent and H. J. Bolinger, with Dr. McCloskey and Dr. B. M. Kraut as guests.

The program of the evening was a Symposium on Military Topics. Dr. B. F. Walker addressed the society on his military experience with the French army, explaining the difference between the base hospital, clearing hospital and convalescent hospital. Dr. Hudson Smythe spoke on his anticipation of service with the University of California Red Cross Unit. First Lieutenant B. M. Kraut, U. S. Army, gave a very pleasant talk on emergency treatment of war wounds and fractures, and Dr. J. E. Nelson explained the purpose of the San Joaquin County Red Cross Unit.

At the close of the program, a very delightful buffet luncheon was served by Dr. Sargent.

H. J. BOLINGER, Sec. Pro. Tem.

SISKIYOU COUNTY.

The Siskiyou County Medical Society held its regular quarterly meeting at Shasta Springs, Monday, July 2nd, at 2 P. M.

Dr. Leo Eloesser of San Francisco gave an interesting talk on injuries of the joints as ob-

served by himself while serving as surgeon at a large base hospital in Germany during the present war. Dr. Eloesser's talk was illustrated by lantern slides and he clearly demonstrated how the mortality decreased as the treatment of the injuries improved.

Dr. Theodore Rethers of San Francisco followed with a discussion of the German methods.

Dr. Hal Warren of Montague read an interesting paper on Angina Pectoris and Dr. C. W. Nutting, Jr., of Etna Mills read one on a valuable method of treating inevitable abortion when assistance was not to be had.

At the business meeting Dr. C. W. Nutting, Sr., of Etna Mills was elected President, Dr. A. A. Milliken of Fort Jones, Vice-president, and Dr. H. R. Parker of Dunsmuir, Secretary and Treasurer.

A banquet was served by the Shasta Springs Hotel Co. for the members and their wives at 6 P. M.

H. R. PARKER, Secretary.

EXAMINATION QUESTIONS—STATE BOARD OF MEDICAL EXAMINERS JUNE, 1917.

Surgery.

P. T. PHILLIPS, M. D.

10:00 A. M. to 12 M., June 11, 1917.

1. Discuss briefly enteroclysis, drip method (Murphy), and its uses in surgery.
2. How would you treat a gunshot wound involving the elbow joint?
3. Describe acute suppurative otitis media, giving treatment. Name the complications that may arise if not properly treated.
4. Give the causes and treatment of sympathetic ophthalmia.
5. Describe briefly the different accepted methods of treating burns.
6. Describe in detail the method of using Carrel-Dakin solution in the treatment of infected wounds.
7. Describe dislocations of the astragalus, giving causes and treatment.
8. Describe symptoms of perforated typhoid ulcer and give surgical treatment in detail with prognosis.
9. Describe in detail treatment of fracture of patella.
10. Discuss briefly drainage of the abdominal cavity. (a) When to drain. (b) How to drain.
11. When would you advise nephrectomy? Describe operation in detail.
12. How would you treat a deep infected wound of the palm and what are the dangers of improper treatment?

(Answer ten questions only.)

Physiology.

ERNEST SISSON, D. O.

1:30 P. M. to 3:30 P. M., June 11, 1917.

1. Describe the olfactory stimulus and discuss relations of odors and taste.
2. Explain the variations in pulse rate caused by change in properties or composition of the blood.
3. Describe the nervous mechanism involved in vomiting.
4. Discuss the specific qualities of enzymes.
5. Describe the functioning of the gall bladder and causes of same.
6. How does the venous structure in the brain differ from that in other parts of the body?
7. What is the physiological process of recovery from pneumo-thorax?
8. Discuss the cerebro-spinal fluid as to its formation, location and function.
9. Describe the excretory functions of the skin giving nerve regulation.
10. Describe the relation of the ovaries to menstruation.
11. What effect has peripheral resistance on arterial and venous pressure?
12. What protective reflex would be exercised upon contact with irrespirable gases?

(Answer ten questions only.)

Pathology and Bacteriology.

DAIN L. TASKER, D. O.

4:00 P. M. to 6:00 P. M., June 11, 1917.

1. Discuss normal histolysis and cytolysis.
2. What diseases produce infective granulomas in the testicle?
3. Describe the pathology in acute osteomyelitis.
4. Give the blood picture in pernicious anemia.
5. What is the significance of leucocytosis?
6. Discuss gall stones.

NOTE—In the following six questions the examinee is privileged to select for his discussion a disease which typifies the class of infecting organs noted. Make all discussions brief.

7. Discuss the characteristics of some one member of the micrococcus group of bacteria and describe the body's typical reaction to it.
8. Discuss the characteristics of some one member of the bacillus group of bacteria (spore bearing) and describe any local lesion which is characteristic.
9. Discuss the characteristic pathology of some one member of the group of diseases caused by filterable viruses.
10. Discuss the causative organism and the pathology which characterizes some one disease among those due to yeasts.
11. Discuss the causative organism and pathology which characterizes some one disease due to a protozoan infection.
12. Discuss the causative organism and the pathology which characterizes some one disease due to a metazoan parasite.

(Answer ten questions only.)

General Medicine Including Clinical Microscopy.

For Physician and Surgeon Applicants.

H. L. ALDERSON, M. D.

June 12, 1917.

1. Discuss the symptoms, and prophylactic and active treatment of chlorine gas poisoning.
2. Discuss the etiology, diagnosis and treatment of amoebic dysentery.
3. Discuss briefly the symptoms and diagnosis of hyperchlorhydria.
4. Discuss briefly the diagnosis of latent lues.
5. Discuss the treatment of high blood pressure in a woman seventy years old.
6. Discuss the etiology, symptoms and treatment of seasickness.
7. Discuss the clinical and laboratory diagnosis of leprosy.
8. Discuss eosinophilia, its significance and the method by which its presence is determined.

9. Discuss the diagnosis and medical treatment of cholelithiasis.
10. Discuss the symptoms, signs and treatment of hyperthyroidism.
11. Discuss ascites, its etiology and symptoms.
12. Discuss the etiology of diarrhoea in children.

(Answer ten questions only.)

Chemistry and Toxicology.

H. CLIFFORD LOOS, M. D.

June 12, 1917.

1. What is the general composition of Hydrocarbons of the Paraffin series?
2. What is the formula of Methyl-Ethyl Ether and give general chemical characteristics.
3. What is the difference between vegetable and animal life from a chemical standpoint?
4. What is the final result of decomposition of dead plants or animals?
5. What is the treatment for the results of an overdose of Digitalis?
6. Give method of the action of Phenol introduced into the stomach.
7. Give in detail a recognized treatment for chronic Morphine poisoning.
8. Give treatment for Wood Alcohol poisoning.
9. Give a full description of the nature and action of enzymes. Give examples of each class.
10. Explain the term calorie, and give its use in the valuation of food.
11. Discuss alkaloids, name five and give their toxicology.
12. What substances poison by way of the respiratory tract?

(Answer ten questions only.)

Obstetrics and Gynecology.

For Physicians and Surgeons.

By ROBERT A. CAMPBELL.

June 12, 1917.

1. What measures should be used to prevent, (a) Mastitis; (b) Ophthalmia Neonatorum
2. Describe the operation for complete laceration of the perineum one year after injury.
3. Discuss uremic poisoning in the pregnant woman.
4. (a) What should be done prior to the application of forceps?
   (b) Describe their applications.
   (c) Describe the method of delivery after application.
5. Give technique of operation for cancer of the cervix.
6. Discuss the phenomena of menstruation.
7. (a) Under what conditions is amputation of the cervix indicated?
   (b) Why is it preferred to other methods?
   (c) Describe the operation.
8. Discuss Pelvic Cellulitis and Pelvic Peritonitis.
9. Give causes and treatment of prolapsed cord.
10. Describe the modus operandi in arm presentation.
11. Give etiology and treatment of sub-involution of the uterus.
12. What procedures may be used for the resuscitation of the child?

(Answer ten questions only.)

Anatomy and Histology.

WM. R. MOLONY, M. D.

June 13, 1917, 9:00 A. M. to 11:30 A. M.

1. Discuss cartilage, giving brief description of each of the three varieties.
2. Name structures derived from
   (a) The Ectoderm;
   (b) The Mesoderm;
   (c) The Entoderm.
3. Discuss adipose tissue.
4. Describe the sacrum.
5. Describe the maxilla.
6. Discuss a bursa. Locate ten.
7. Give path of sensory impulse from skin to brain.
8. Give path of motor impulse from brain to muscle.
9. Discuss the colon.
10. Give the gross and topographical anatomy of the pancreas.
11. In an amputation of the thigh through its middle what structures would be severed?
12. In a total amputation of the shoulder (removal of the upper extremity with the scapula from the body), what muscles would be severed?

(Be brief and to the point and arrange your answers in columns where possible.)

(Answer ten questions only.)

Homeopathic Materia Medica, Therapeutics, Pharmacology and Prescription Writing.

ROBERT A. CAMPBELL.

June 13, 1917, 1:30 P. M. to 3:30 P. M.

1. Name four remedies useful in Pneumonia with the indications for each.
2. Write a prescription for an injection for acute Gonorrhoea, with directions for use.
3. Discuss Bryonia Alba.
4. Describe the physiological action of Merc. Corr. on the intestinal tract.
5. Give the indications for three remedies for acute cystitis.
6. Name and give dosage of two remedies which will make the urine alkaline, and two which will make it acid.
7. What is apomorphine? Give dosage indications and action.
8. Give treatment for a case of La Grippe.
9. Give indications for Cactus, Digitalis, and Glonoin in heart trouble.
10. Discuss the cause and treatment of Asthma.
11. Write a prescription for three drugs and a vehicle. Describe the condition for which you would prescribe it.
12. Discuss peripheral Neuritis, and outline treatment.

(Answer ten questions only.)

Materia Medica, Therapeutics, and Pharmacology.

A. M. SMITH, M. D.

June 13, 1917, 1:30 P. M. to 3:30 P. M.

1. Outline the treatment of a case of diabetes mellitus, of two years' duration, in a man of 50 years of age, whose present weight is 150 pounds.
2. Discuss the treatment of an acute attack of bronchial asthma.
3. Define mydriatic, diaphoretic, sedative, hypnotic, oxytocic, carminative. Give example and dosage of each.
4. Discuss the treatment of myxoedema, including the symptoms of overdose.
5. What measures would you use to prevent circulatory collapse in pneumonia? In the event of its occurrence what would you advise?
6. Name six diuretics. Dose and mode of action of each.
7. Discuss digitalis, including the official preparations and physiological action.
8. In what conditions is podophyllum used? What is the physiological action? With what other drugs should it be combined?
9. Discuss the advantage of novocaine over cocaine as a local anesthetic. Why is adrenaline given in conjunction with novocaine
10. What is chrysarobin? Discuss the therapeutic use.

11. In what forms and for what conditions is arsenic commonly used? Give dosage.
12. Discuss the action of scopolamine.

(Answer ten questions only.)

Materia Medica and Therapeutics. Eclectic.

H. V. BROWN, M. D.

June 13, 1917, 1:30 P. M. to 3:30 P. M.

1. What is Opium? How obtained? Name the important constituents, artificial, alkaloids and important official preparations. State the parts affected, and mode of operation of the drug.
2. Name the various kinds of stimulants, give examples of each, and give the specific symptomatology for Nux Vomica.
3. Name the important Nitrites, the form and manner of administration, dosage and their action upon the circulatory apparatus.
4. Differentiate Digitalis, Strophanthus and Apocynum, physiologically, and give the specific indications for each.
5. Differentiate Lobelia and Ipecacuanha as to their action upon the nervous system, gastro-intestinal and respiratory tracts.
6. Name and give dosage of the active principle of Podophyllum. Give its course through, and elimination from, the body, regardless of method of administration, and its specific symptomology.
7. Differentiate between the therapeutic action of Phytolacca, Echinacea and the Iodides.
8. For what form of intestinal parasite is each of the following drugs remedial: Santonin; Spigelia; Aspidium; Felix Mas; Pelletierine Tannate.
9. Discuss the various actions of remedies upon the kidneys, and give an example of each.
10. What is an alkaloid? Name 5. What is tincture? A fluid extract?
11. Quinine: From what obtained? Physiological action in doses to 5 grs. on the blood, nervous system, heart, and respiration? How eliminated and what is its specific action?
12. Write a prescription containing two diuretic drugs and explain the action of each.

(Answer ten questions only.)

Hygiene and Sanitation.

H. V. BROWN, M. D.

June 13, 1917, 3:30 P. M. to 6:00 P. M.

1. Discuss fully the problem of controlling venereal diseases in the army.
2. (a) Enumerate five Medical Military problems of the War relating to disease.
   (b) Discuss one fully.
3. State the maximum and minimum physical requirements for military service.
4. Upon what grounds may an applicant for military service be rejected?
5. What is embraced in naval quarantine and naval hygiene?
6. Discuss prophylaxis of infectious diseases from a military standpoint, including natural and artificial immunity.
7. Describe the essentials of personal hygiene for a soldier.
8. Discuss the etiology of asthma, and the climatic therapeutics of the same.
9. (a) How may it be determined that an individual is a typhoid carrier?
   (b) How may it be determined that an individual is a diphtheria carrier?
10. Discuss the question of house dampness in its relation to disease and give methods of prevention.
11. Discuss the relation of meat to disease.
12. Discuss three varieties of stimulants excluding drugs, which are in common use

(Answer ten questions only.)

NOTICES.

The Fourteenth Annual Meeting of the Pacific Association of Railway Surgeons will be held in San Francisco, August 24th and 25th next.

Sacramento, California,
June 23, 1917.

To the Subscribers of the Directory:

Supplements to the Directory covering data in reference to licentiates of 1917 will be furnished on receipt of seventy-five cents (75c).

C. B. PINKHAM, M. D.,
Secretary-Treasurer Board of Medical Examiners,
State of California.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

(Devoted to the Advancement of Pharmacy and its allied branches; to the work of the Council on Pharmacy and Chemistry of the Americal Medical Association, and to matters of interest bearing upon therapeutic agents offered to the medical profession. The editor will gladly supply available information on subjects coming within the scope of this Department.)

NEW AND NONOFFICIAL REMEDIES.

Since publication of New and Nonofficial Remedies, 1917, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Kephalin-Armour.—The hemostatic phosphatid obtained from spinal cord and brain tissue of mammals. It is essentially the same as Brain Lipoid, N. N. R. For a discussion of the actions and uses see New and Nonofficial Remedies, 1917, p. 124, under "Fibrin Ferments and Thromboplastic Substances (Kephalin)." Kephalin-Armour is applied freely to bleeding or oozing surfaces in 1 to 2 per cent. suspensions in physiological sodium chlorid solution. Armour and Co., Chicago (Jour. A. M. A., June 2, 1917, p. 1625).

Thorium Nitrate.—A white substance, very soluble in water and alcohol. Soluble thorium salts resemble alum in their local astringent and irritant properties. They are not absorbed from the alimentary canal. The non-precipitant double salts of thorium are practically non-toxic, even intravenously. Thorium salts are fairly radioactive.

Thorium Sodium Citrate Solution.—Prepared by dissolving thorium nitrate, 10 gm., and sodium citrate, 15 gm., in water, neutralizing with sodium hydroxide and diluting to 100 cc. Being impervious to Roentgen rays, the solution is used to obtain cystograms of the renal pelvis and urinary bladder.

Thorium Solution for pyelography—H. W. and D., 10 per cent.—It is the same as thorium citrate solution. Prepared by Hynson, Westcott and Dunning, Baltimore, Md.

Stronger Thorium Sodium Citrate Solution.—Prepared by dissolving thorium nitrate, 15 gm., sodium citrate, 22.5 gm., in water, neutralizing with sodium hydroxide, and diluting to 100 cc. It is used for obtaining urethral pyelograms.

Thorium Solution for Pyelography—H. W. and D., 15 per cent.—It is the same as thorium citrate solution. Prepared by Hynson, Westcott and Dunning, Baltimore, Md. (Jour. A. M. A., June 16, 1917, p. 1817).

Betanaphthol Benzoate—Anthony-Hammond Chemical Works, Inc.—A brand of betanaphthol benzoate which complies with the N. N. R. standards for this drug. Anthony-Hammond Chemical Works, Inc., New York City.

Calcium Cacodylate.—The calcium salt of cacodylic acid containing from 43.5 to 48 per cent. of arsenic in the form of cacodylic acid and free from arsenite, arsenate and monomethylarsenate. It has the mild arsenic action of cacodylates. Calcium

cacodylate is white, almost odorless, and very soluble in water.

Ampuls Calcium Cacodylate Solution—Mulford. —Each ampule contains calcium cacodylate 0.045 gm. in 1 cc. The H. K. Mulford Co., Philadelphia, Pa.

Chlorazene Surgical Cream.—It contains chlorazene, 1 gm., in 100 gm. of a base composed of sodium stearate, 15 per cent., and water, 85 per cent. The Abbott Laboratories, Chicago.

Borcherdt's Malt Extract with Cod Liver Oil.— A liquid composed of cod liver oil, 20 per cent., and Borcherdt's Malt Extract Plain, 80 per cent. The Borcherdt Malt Extract Co., Chicago.

Borcherdt's Malt Extract with Creosote.—100 cc. contain beechwood creosote, 4 minims per fluidounce, in Borcherdt's Malt Extract Plain. The Borcherdt Malt Extract Co., Chicago.

Borcherdt's Malt Extract with Cascara Sagrada. —100 cc. contain cascara sagrada, 60 grains per fluidounce, in Borcherdt's Malt Extract Plain. The Borcherdt Malt Extract Co., Chicago (Jour. A. M. A., June 23, 1917, p. 1911).

Lipoiodine-Ciba.—The ethyl ester of iodobrassidie acid containing 41 per cent. of iodin. Lipoiodine-Ciba is odorless, tasteless, insoluble in water but very soluble in fatty oils. When administered, it is absorbed almost completely and excreted more slowly than inorganic iodids but more rapidly than with other iodized fats. It is said to be less likely to produce gastric irritation than ordinary iodids. It is supplied only in the form of Tablets Lipoiodine-Ciba, 0.3 gm. A. Klipstein and Company, New York (Jour. A. M. A., June 30, 1917, p. 1985).

Items of Interest.

The Calcium Content of the Blood.—It has been found that the calcium content of the blood plasma of cattle is remarkably constant, even when there is a continuous withdrawal as a result of pregnancy or lactation. It has also been found that there is no marked deviation from the normal in the calcium content of the blood serum of patients in the various stages of pulmonary tuberculosis. Even when a high milk diet was furnished over long periods, the calcium content of the blood was not increased above normal. Further, it was shown that the calcium content of the blood serum of normal human adults did not differ from that in sufferers from tuberculosis. Finally, it has been found that the calcium content of blood plasma differs little from the normal in advanced cases of uremia or in hemophilia or in purpura hemorrhagica (Jour. A. M. A., June 23, 1917, p. 1915).

Russell Emulsion and Russell Prepared Green Bone.—The Council on Pharmacy and Chemistry reports that "The Russell Emulsion" and "The Russell Prepared Green Bone," put out by the Standard Emulsion Company, are inadmissible to New and Nonofficial Remedies. The Russell Emulsion is said to be composed of beef-fat, coconut, peanut and cottonseed oils, held in suspension by albumin. The mixture is called a "physiological" emulsion and is exploited on the theory that lime starvation is a main factor in tuberculosis and that large amounts of fat are required for the lime-starved. There is no proof that tuberculosis is due to an insufficiency of lime in the tissues, and the claims made for the emulsion are grossly unwarranted. Particular attention is called to the exploitation of the emulsion by one Dr. Hague who talks before medical societies. The Russell Prepared Green Bone is said to be made by digesting chicken bones with hydrochloric acid and pepsin and adding glycerin at the end of the digestion. This is advertised as a lime food. The greater value of a few glasses of milk daily is not mentioned (Jour. A. M. A., June 23, 1917, p. 1931).

NEW MEMBERS.

Allen M. Thomson, Sonoma.
Herbert I. Bloch, San Francisco.
Charles A. Bell, Santa Barbara.
Laurence E. Heiges, Lompoc.
Henry Clay Bagby, Santa Barbara.
Augustus Lincoln Morrill, Antioch.
Bartholomew Gattuccio, Davenport.
Bessie Faith C. M. Raiche, Balboa.
Oscar O. Young, Garden Grove.
Albert Osborne, Anaheim.
George H. Dobson, Santa Ana.
Fred. O. Butler, Eldridge.
Charles R. Knox, El Cajon.
Chas. Lincoln Stoddard, San Diego.
Carrie H. Edwards, San Diego.
H. Clifford Loos, San Diego.
Arthur Newton Bobbitt, San Diego.
Frank Dunlap, Brawley.
George Wirt Hathaway, Yreka.
Wilfred E. Bixby, Sebastopol.
Howard Hill Markel, San Francisco.
William H. Harrison, San Francisco.

DEATHS.

CHARLES A. VON HOFFMAN, M. D.

In Memoriam.

The death of Dr. Charles von Hoffman on May 11th closed a long and honorable career; and for those who knew him it carried a special poignancy. Dr. von Hoffman was graduated from the University of Leipzig in 1875; he established himself in San Francisco in the following year. His temperament and talents were eminently suited for the branches which he was to make his life work, and within a few years his reputation as a gynecologist and obstetrician of the first rank was firmly established. In 1890 he joined the faculty of the medical department of the State University, and later succeeded the late Beverly Cole as head of the department of gynecology. Five years ago he became emeritus professor. He was also closely identified for many years with the Alexander Maternity of the Children's Hospital and other institutions.

In an age of riotous enthusiasms Dr. von Hoffman brought to bear on his work and conduct cautious and critical discrimination. In this sense alone was he a conservative. His lectures epitomized shrewd first-hand clinical observations enriched by the fruits of wide reading, and his surgical work was characterized by a uniformity of technical excellence and good judgment. Those who had the privilege of his friendship realized the extent and variety of his knowledge, his luminous and delicate insights, and what was perhaps more remarkable than any single faculty, the admirable harmony and symmetry of his mind and character. And we cannot forget those higher attributes which made him universally respected—his fervent love of truth, his wide tolerance and his disdain for noisy triumphs. In his walk through life there was no obtrusiveness, no elbowing, none of the artifices which bring forward little men.

What remains of one in memory, after death, is usually but a slight thing—the phantom of an attitude, the echo of a phrase, or some victory in a critical hour. It is as if the whole meaning of a man's life had now shrunk to a mere gesture, act or word suggestive of his singularity. Fortunate are those whose personality and achievements have been sufficiently pronounced to be victorious over the pity of such a diminution and abridgment. For many of us such a man was Charles von Hoffman.

A. J. L.

Edwin Dunbar Farrow, Visalia.
John Montgomery, San Francisco.
Russell D. Adams, Monrovia.
James Watson Wood, Long Beach.
C. Guy Reily, Los Angeles.
Harriet F. Pillsbury, Berkeley.

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Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XV SEPTEMBER, 1917 Number 9

THE QUOTA OF DOCTORS FOR THE ARMY.

There are about 150,000 physicians listed in medical directories. Deducting from these 50,000 who are not in practice, or are physically incompetent, leaves 100,000 doctors available. Of this number the Surgeon-General requires 20,000, or one-fifth of the active practitioners as officers in the Medical Reserve Corps of the Army. This means that one out of every five physicians in California is needed in the Army and *must go at once*. Every reader of this page is urged most seriously to see that the profession in his vicinity is represented at least in proportion.

The lowest commission offered a doctor is First Lieutenant, which draws in pay $2000 a year; Captains receive $2400 and Majors $3000. The cost of equipment is about $150 to $175, according to the desires of the individual. The individual outlay when once in the service is principally expenditure for food, which averages about $25 a month.

The need of doctors is not alone for the mobile army but also in concentration camps, evacuation hospitals, base hospitals and on transports. It is of decided advantage to volunteer your services and receive the benefit of the very necessary training accorded physicians in medical training camps. It is a safe assumption that for those who receive such training and show their aptitude for the service, advancement will be rapid.

Applications for commissions in the Medical Reserve Corps will be sent to you by your Local Examining Board or by the Editor of this paper. Apply for your commission *now*. Your country needs you.

DANGER FROM BOTULISM.

In the present national crisis one of the chief topics of interest to the average citizen has been the rapidity with which staple articles of diet have risen in price until they are almost beyond the reach of the small wage earner. In order to combat the "high cost of living" and to conserve such foods as can be shipped to our allies in Europe, there has been a widely advertised propaganda, urging that all who have access to the fresh material should provide for the coming winter by canning vegetables and fruits at home; and the leading newspapers have co-operated with the authorities by publishing detailed descriptions of how the canning process should be carried out.

It is probable that much larger quantities of fruits and vegetables are being canned at home this year than ever before, and that many persons will be depending upon home-canned foods who have formerly used only commercially-canned products. It is urgent, therefore, that the medical profession should be alert to the danger which may arise from poisoning from foods which have been improperly preserved.

One of the most important types of food poisoning in California in recent years is due to the toxin of the Bacillus botulinus, which, as has been shown by Dickson,[1] [2] may be produced in home-canned vegetables and fruits. The majority of human cases of botulism have followed the ingestion of home-canned beans and corn, but cases have been described in which apricots and asparagus were at fault, and Dickson's experimental work has shown

1 Dickson, E. C. Botulism, An Experimental Study. Jour. Amer. Med. Assoc., 1915. LXV, 492.
2 Dickson, E. C. Botulism, Its Occurrence in California. Cal. State Jour. of Med., 1916. XIV, 143.

that pease, artichokes and peaches must also be considered with suspicion.

The great danger of poisoning from botulism lies in the fact that the toxin of the B. botulinus may be present in vegetables and fruits in sufficient amounts to cause death, without producing any marked change in the appearance of the food. There is usually a certain amount of fermentation and there may be a slightly "spoiled" odor, somewhat like butyric acid, but the vegetable or fruit may not be softened or discolored, and there are at least three fatal cases on record in which the housewife merely tasted the contents of jars of vegetables to determine whether they were spoiled. The taste is sharp or slightly rancid, but has been described as "not unpleasant" in cases where string beans were served as salad, and apricots were served as dessert. Heating the toxin to the boiling point will destroy it, and it is therefore important that no home-canned vegetables or fruits should be tasted until they have been boiled.

Symptoms of poisoning usually occur within thirty-six hours after the food has been eaten, although they may appear within twelve hours. There may be initial gastro-intestinal disturbances, with burning in the stomach, nausea, vomiting and diarrhoea, but gastro-intestinal irritation is of short duration, and obstinate constipation soon follows. Among the earliest symptoms are disturbances of vision, dilatation of the pupils, loss of accommodation, double vision due to paralysis of the extrinsic muscles of the eyes, and blepharoptosis. Difficulty in swallowing and in speech soon follow, due to paralysis of the muscles of the pharynx and larynx. The mouth and skin are dry, the tongue coated, and the flow of saliva is inhibited. The patients suffer greatly from the pressure of thick, tenacious mucus in the pharynx which they are unable to raise. Strangling spells brought on by attempts to swallow or to cough may be very severe. There is marked general weakness, usually without true paralysis of the skeletal muscles, and loss of muscular co-ordination. The temperature is usually normal or sub-normal, the pulse may be slow at first but soon becomes rapid, and mentality is clear. The duration of a fatal illness is usually from about four to twelve days, and when recovery occurs the convalescence is slow and tedious. There are seldom any severe permanent disabilities in patients who have recovered. When death occurs it is usually from respiratory or cardiac failure, the course and termination of the illness being that of bulbar paralysis.

The majority of recorded cases have occurred in California and the mortality has been over 60 per cent. In a number of instances the poisoning in human beings has occurred at the same time as outbreaks of paralysis (limber-neck) in chickens and turkeys which ate the discarded food.

Treatment in severe cases is entirely unsatisfactory, but since the illness is caused by a limited amount of the poison, there is no increase in the amount of toxin after the food is taken into the gastro-intestinal tract, and since there is promise of complete recovery if the immediate action of the poison is withstood, active treatment should be persevered with in all cases. Emesis should be induced even though the patient has vomited spontaneously, and though several hours may have elapsed since the food was taken into the stomach, and active purgation should be instituted if possible, preferably with castor oil or epsom salts. Enemata should be given if purgation is not obtained. The patient should be kept as quiet as possible and should have sufficient simple food and plenty of water. Stimulants should be given as indicated. Strychnine may be given freely and seems to be of value. Pilocarpine may relieve the dryness of the mouth and pharynx, but must be used with care, as the patient is unable to cough up fluid from the lungs in case of pulmonary edema. The danger of insufflation pneumonia should be borne in mind, and it is often advisable to give water per rectum instead of by mouth. Oxygen should be held in readiness for artificial respiration, and, since respiratory failure may occur while the circulation is still good, the artificial respiration should be maintained for hours if necessary. Anti-toxin sera may be of some value if given very early, and it is hoped that they will be placed upon the market within a few months.

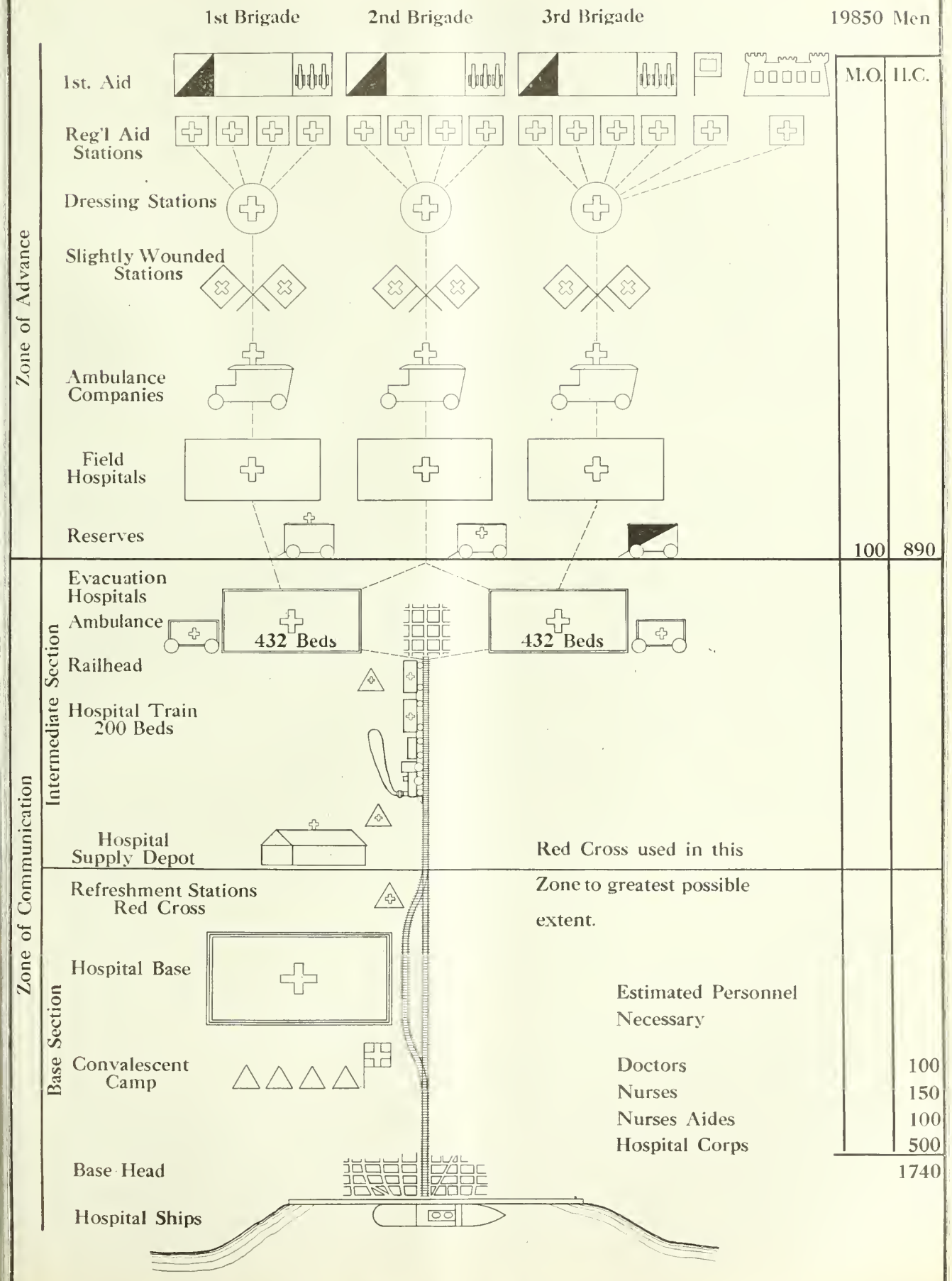
The control of botulism is in the hands of the housewife rather than in the hands of the physician, as care in the preparation of home-canned foods will eliminate all danger of poisoning. Fruits and vegetables should be canned by the methods that are authorized by the United States Department of Agriculture. No home-canned products should be served, or even tasted, until they have been boiled. No canned vegetables or fruits which show the slightest sign of spoiling should be eaten or tasted by human beings, and all spoiled material should be boiled for at least an hour before it is discarded.

RED CROSS UNITS.

Last month attention was called to the opportunity afforded by the Red Cross for physicians at home, as well as for those able with better fortune to serve with the fighting forces of the nation. For the purpose of service with the army, or for purposes of training personnel, there are various Red Cross units available in which a man of any capability, or of any inclination or special training, can find valuable and useful employment.

First on this list comes the Red Cross ambulance company, which supplements and assists the regular army service in the removal of wounded from the front to hospital accommodations. These companies may be used on hospital trains and ships, as well as on other means of transport, and also for the establishment of emergency hospitals. The ambulance company has five medical officers and a corps of 86 enlisted men. The base hospital unit is enrolled for service at a military base. Its organization includes a director with a staff made up of an adjutant, quartermaster and a registrar. It has a surgical section with a chief and eight staff surgeons, including an orthopedist and one or more eye, throat and ear specialists. Its medical section has a chief and five staff physicians, including a specialist on nervous and mental diseases. The laboratory section has a chief and two qualified as-

DIAGRAMMATIC SANITARY SERVICE OF DIVISION



sistants. There are also in the unit two dentists skilled in oral surgery, fifty nurses, twenty-five volunteer nurses' aids, 150 male personnel and 15 employees. Various other volunteer assistants may be attached.

The hospital unit is designed to supplement established military hospitals. Sections of these units may be assigned to other sanitary organizations where need arises. The hospital unit consists of a director, a surgical chief and four staff surgeons, a medical chief and four staff physicians, a head nurse and twenty nurses, and three clerks who may be women.

The surgical section unit is intended to reenforce the operating staffs of military hospitals in time of emergency. This unit consists of a director, three surgeons, one head nurse and six nurses, two orderlies and a recorder who must be a stenographer. There is an emergency nurses' detachment to meet sudden calls for assistance from the regular sanitary services for duty in any emergency requiring nurses. This detachment consists of a head nurse who is one of a group of ten nurses.

The sanitary training detachment is organized to train men for duty in the enlisted medical corps at the front and in the line of communications. It includes a commandant with assistant, quartermaster, pharmacist, five section chiefs, four mechanics, four carpenters, two cooks, two clerks and forty privates. The two first named officers are physicians. The information section is designed to record and report names, addresses, physical condition and other data of patients and prisoners. Refreshment units are enrolled for the purpose of furnishing refreshments to troops in transit, and to patients and convalescents at stopping points en route. Supply depot units are intended to care for Red Cross supply depots. Red Cross general hospitals are also organized in the home country to be taken over by the military establishment in case of need. Finally there is a division concerned with providing homes for convalescents.

Surely no physician can escape the conviction that if his place is not with the fighting forces, then there is some place open to him in this varied organization which he should lose no time in occupying. This is a time for every man to do his bit and his best bit. Above all it is the time for physicians to enroll in their country's service, if not abroad, then without fail at home. No one is exempt from the obligation of this service.

THE ALCOHOL QUESTION.

III. Alcohol a Public Health Problem.

All proponents of our western type of civilization are agreed on the elemental importance of disease prevention. This is not true of Oriental civilizations. We therefore consider that man out of sympathy with our type of civilization who does not accept the obligation of disease prevention as axiomatic. We may not remain sane and civilized, and think otherwise. It follows in order that the strifes and contentious bitterness which have signalized the advancing art of preventive medicine, must have arisen from variant interpretations of ways and means for fostering public health, which is the epitome of preventive medicine. Whether we believe that disease is error of mind alone, or whether we accept the theory of specific germs in its totality, we do, all of us, assume the initial premise that disease should be prevented, and each in his several way seeks the advantage of that intangible thing we call the public health.

If then contention arises solely from differing judgment of ways and means, it would seem inevitable that, provided a certain method gave definite evidence of successfully advancing the cause of public health, it should and would receive hearty support from every member of our western civilization. And any who oppose such a method would thereby declare themselves in the category of those who are not in sympathy with the ideals of our civilization. If, finally, alcohol as a beverage can be demonstrated inimicable to public health in a large degree, and if no confiscation of invested capital is permitted during its eradication, surely its eradication must command the hearty support of all who do not fall in the category above named.

It remains then to decide whether alcohol has a public health relationship, and if it has, whether it is beneficial or adverse to the public health in any large degree. Only with this decision made, are we ready logically to take action. And if alcohol cannot prove itself a distinct advantage to the cause of public health and the advancement of civilization, and if, moreover, there is irreproachable evidence of its deleterious influence, then we can but logically demand its complete elimination.

Diseases may be classified roughly as communicable, industrial and degenerative or constitutional. It is not necessary in the year 1917 to demonstrate the enormous evidence that predisposition to infectious diseases increases with the use of alcohol. Bacteriology has spent a herculean labor in elucidating the specificity, properties, virulence and favoring environment of bacteria. Only recently have we begun to attack those infinitely more abstruse problems of predisposition and resistance to infection. What may eventuate from the hypotheses of today, no man can say. This much we know, however, by induction from an overwhelming mass of data. Alcohol renders the tissue soil more susceptible to bacterial invasion.

The relation of alcohol to industrial disease and accident is equally well estabished. Due to its physiological action which has been discussed in a former editorial, it favors and predisposes to casualty. Brickley [1] summarized a study of 40,000 patients per year treated in the Haymarket Relief Station in Boston, as follows: Alcohol causes accidents, obscures diagnosis, increases liability to infection at time of accident, prevents adequate treatment, increases danger of complications, retards repair, gives poorer end results, and increases mortality from accident. Haven Emerson [2] says that alcohol increases susceptibility to metallic poisoning in lead, phosphorus and aniline industries. The available data on the relation of alcohol to indus-

1. Boston M. & S. Jour., May 20, 1916, p. 744.
2. Am. J. Pub. Health, June, 1917, p. 558.

trial disease is enormous and bears but one interpretation.

As to the third classification of disease, it is becoming daily more evident that alcohol plays a prominent role in various degenerative processes and in defective heredity. Moral and mental degeneration are no less definite under its influence. To call alcoholism a symptom, and not a cause, is undoubtedly correct in many cases, yet the results in increase of disease are the same no matter what the explanation for the presence of alcohol. Here too must be noted that vicious circle in which alcohol can never be clearly established as cause or effect, namely, poor housing, poverty, high disease incidence, poor moral conditions, crime, alcoholism. It is beside the question and well-nigh impossible to establish alcohol as the root evil. Its common association under any etiology with these social vices is enough to condemn it.

Public health activity thus far has confined itself with singular persistence to infectious disease. At last, however, it is recognized that the function of preventive medicine is the prevention of all disease. Mortality rates can no longer be lowered with such breathless rapidity as attended the earlier campaigns against infectious diseases. We have not yet reached a perfect score, but yellow fever, plague, malaria, typhus, smallpox, typhoid, *ex grege*, are controllable. In the further significant reduction of mortality rates, we consider that constitutional and degenerative disease must be reduced by proper methods of prevention. If alcohol has the important primary and contributory relation to these diseases which scientific opinion assigns to it, then does alcohol become a paramount problem of public health.

The economic aspect of the case is of no small public health importance. Why should California in 1914 have the burden of imprisoning 2900 alcoholics in her county jails alone for an average period of twenty-two days? Why should there be near a thousand inebriates and drug habitues sent to the state insane hospital in a year, and of course the much larger number outside? Why should California bear the enormous cost of alcohol in industrial inefficiency, in care of defectives and sick due to alcohol, in imprisonment and policing made necessary by alcohol, in crime fostered by alcohol, and in disease induced and nurtured by alcohol, when proper consideration of the subject from the standpoint of the public health would lead to the abolition of alcohol?

It is the function of every board of health and health office to perpetuate those influences making for better public health and to attack aggressively those influences inimicable to the public health. Why should not the boards of health in California, from the state board to the health officer of the smallest community so fortunate as to have such an office, follow the example of the New York City board of health, and declare uncompromising war on alcohol in the interest of that public health they are subscribed to defend? In this connection attention is called to an excellent article by Professor Jaffa [3] in the monthly bulletin of the California State Board of Health on the relation of alcoholic beverages to the national food problem. Why, above all, should not each individual physician feel within himself the obligation to make his really primary work the prevention of disease and as one part of this work, the eradication of alcohol as a beverage? Alcohol is doubtless a major public health problem in the world today. Why not face the facts and establish our convictions, if we have any?

3. July, 1917, p. 8.

EDITORIAL COMMENT.

We have thus far received no answer to the query last month under the caption, "Medical Women and the War," as to why women physicians should not receive the same rank and emolument for war service as men receive. In case the Government is unable or unwilling to utilize the proffered services of women physicians, the opportunity is not to be forgotten that presents itself in dispensary practice, laboratory, teaching, and various other public activities where men are released, or may be released, for active duty at the front, if only women can be secured to fill their positions. The same process is working out advantageously in other lines. Why should not the woman physician make possible a larger number of medical men with the fighting forces, by taking over their medical services at home?

Every reader of this and of most other journals of a like description is wearied beyond words by appeals to "support our advertisers." Here is another appeal, not in the form of an appeal, but in the likeness of a confident expectation that every reader of this JOURNAL has enough interest in it, his own property, to lead him to quote the JOURNAL to advertisers, and to trade with advertisers. The patronage of the medical profession is well worth while for any advertiser to cultivate. Advertising does get results in this JOURNAL. Why not make the fact more evident by calling attention to it? Why let advertisers complain that they are not receiving the expected patronage, when each reader has only to note the JOURNAL advertisements in ordering?

It will be the endeavor of the JOURNAL office to collect all news items of county interest and publish them in their appropriate column. However the size and interest of each county column will depend on the county associate editor primarily. If you are not satisfied with the space your county receives, or with the news ascribed to it, go after your county editor. If your county has no associate editor, elect or appoint one at once. We want news. If there is none to be had, the fault is not ours. But there is news of medical interest in every county. Send it in. See at the head of the editorial section who is your county editor, and send him news. And we shall be glad to receive letters on current topics if they are written to the point concisely and have something to say.

The Bureau of the Census announces that it will issue for the calendar year 1918 a monograph on tuberculosis mortality. It is requested that every physician, with this in view, pay special attention to his death reports from now on, specific-

ally giving an accurate and definite statement of the occupation of the deceased. This is a matter of real importance, and a little attention on the part of physicians will make possible a much more valuable report.

The Mental Hygiene War Work Committee of the National Committee for Mental Hygiene is anxious to obtain the names of psychiatrists and neurologists who are willing to give part-time service in the examination of National Guard troops in their vicinity. The recent decision of the War Department to examine the National Guard troops in their armories before sending them to camp, makes it necessary to secure at once a large number of examining physicians. To meet the situation the Surgeon General of the Army has arranged to accept for this work qualified physicians on contract. A physician may contract for specified duty, at a specified place, for a specified time, or for part time. This latter provision makes it possible for many physicians who cannot take out commissions, or who cannot give all of their time to the work for a period of months, to give part-time each week. Further information can be received from Dr. Frankwood E. Williams, 50 Union Square, New York City.

Do not pay money to unauthorized agents who claim to be peddling state medical directories. Please report to us at once any such solicitation.

There is probably no class of dependents whose welfare has been more completely neglected, who have received less scientific study and care, than the aged. The child dependent has the world for its guardian; the aged dependent is disowned by its own. There are scores of works dealing with the child in the home and in institutions; until recently there was not a single work considering the institutional care of the aged, not a journal of any kind sufficiently interested in the welfare of the aged to devote special space to this subject.

The keynote of the treatment of aged persons is mental stimulation, to overcome the mental depression natural to the aged, especially those who are dependent upon others for their support. This mental stimulation may be brought about through recreation or amusements, or through arousing an interest in the affairs of the day, or in agreeable work, or in a hobby, or in self or another, or in the institution itself. I saw this well exemplified in a home for aged pensioners near Vienna which I visited a few years ago. The inmates were proud of their institution, and my guide took pains to show me how they helped each other to keep their dormitories, dining rooms and other rooms, halls, and walks clean and neat. They were proud of the appearance of the shops and of the skill of the inmates who worked there. The men took pride in their appearance, and before going out they washed themselves and brushed their clothes, hats and shoes. They had a band and an orchestra composed of inmates who gave occasional performances and always had appreciative audiences. Provision was made for their recreation; there was a well stocked library, and a canteen was established for them on the grounds. The canteen was maintained from the proceeds of knick-knacks made by the inmates, of concerts by the band, contributions from visitors and a slight profit on the sale of things supplied by the canteen, all of which went into a common fund. Similar provision for the recreation of the inmates could be made in all homes for the aged at but little cost.—I. L. Nascher, M. D., New York, Modern Hospital, July, 1917.

Original Articles

SPLENECTOMY IN PERNICIOUS ANEMIA.

By HARRY M. SHERMAN, M. D., F. A. C. S., San Francisco.

"The removal of a spleen damaged by rupture, torsion of its pedicle, or loosened from its position in the abdominal cavity, is an operation in itself not difficult and unlikely to lead to any untoward consequences" (Thursfield and Gow). Therefore the spleen itself may be assumed to be an organ not wholly essential to the life of the individual, and "that its functions, whatever these may be, are capable of performance by other tissues in the body." Sir John Bland-Sutton, in the British Journal of Surgery, Vol. I, No. 2, published in October, 1913, quotes Pliny (A. D. 23-79) as saying of the spleen that "sometimes it is a peculiar hindrance to runners so that they burn it away from those runners who are incommoded by it," and points out that the traditions before the Christian era showed that men and animals could live without a spleen. In 1581 (Bland-Sutton; Adelman), Viard tied the vessels of and removed a spleen that had prolapsed through a wound involving the false ribs, and the patient recovered. Nearly 300 years passed, however, before physiology took up the subject, when, in 1841, Bardeleben extirpated the spleen and thyroid of a dog and the animal lived six years in health afterward.

Vulpius in 1894 (Bland-Sutton) noted that in young animals who had abundant red marrow, splenectomy could be done with no sequent bad effects, but in older animals there was always fever and emaciation. Moreover, Vulpius noted in one of his splenectomized dogs enlargement of the abdominal lymph glands and a number of miliary bodies in the peritoneum and omentum which structurally resembled the Malpighian bodies of the spleen. That they came as a result of the splenectomy is rendered doubtful by a case report of Albrecht (Bland-Sutton) who saw in a young man dead of nephritis, a spleen only the size of a walnut in the usual place, while sprinkled throughout the abdomen—on the ligaments of the liver, on the mesentery and mesocolon and on the peritoneum generally—were a multitude of little spleens, each of which was red, the pulp histologically splenic in character, and each having a capsule and a covering of peritoneum.

In spite of the opportunities of modern times for experimentation, physiologists have not yet been able to ascribe to the spleen a definite function. Thursfield and Gow say of its functions, *"whatever these may be,"* and Bland-Sutton speaks of it as an enormous lymph gland, the removal of which is likened to the removal of enlarged lymph nodes from the neck, axilla or groin.

The present case is reported chiefly because it illustrates the common or normal reaction of patients with pernicious anemia to a splenectomy, and it includes a necropsy report which is practically classical.

The patient, a man 51 years old, was sent to

me by Doctor W. C. Chilson of Tulare. He was an apiarist. He had had indigestion off and on for 15 years. When he had the indigestion he would vomit and so get relief. Sometimes he vomited blood which he thought came from his throat. The last hematemesis was 5-6 weeks before coming to me. He was anorexic and constipated, the stools sometimes being clay colored. He slept badly. He had lost 12-15 lbs. of weight.

Examination in the hospital showed emaciation and jaundice. Clinically the abdomen was negative; the urine was normal except for a trace of albumen; the stool was negative. The blood showed 27% hemoglobin, 850,000 red cells, 5400 white cells. The red cells were irregular in shape and size with poor coloring. There were megaloblasts and a few megalocytes. The white differential count was: polymorphonuclears 79%, large mononuclears 2, small mononuclears 19. There were no malarial parasites. The Wassermann reaction was negative. After a test meal the stomach contents showed no free hydrochloric acid, no combined hydrochloric acid, no occult blood, no lactic acid, no Boas-Oppler bacilli.

Doctor Harold Hill and Doctor G. H. Evans saw him with me and agreed in the diagnosis of pernicious anemia. Under dietetic and arsenic treatment he improved and went home, where he continued the arsenic, but ate, I am quite sure, in a somewhat erratic way, being a man much given to the having of ideas, and once he became possessed of an idea he was wholly dominated by it. For instance, he was unalterably convinced that his condition was due to the inhalation of formic acid in working over his bees.

Five months later he returned and was found to have relapsed, the hemoglobin was 30%, 1,450,000 red cells. Color index 1.+, irregularities of shape and size, many megalocytes, no nucleated cells, no malarial parasites. The white cells were 3400.

A temporary improvement followed rest and food and then he again failed, the red count going down to 950,000, still irregular in shape and size with megalocytes, microcytes, nucleated cells, and poikilocytes. The blood pressure was 110 mm. Hg. At this time he complained of parasthesias of hands and feet, he was very weak physically and somewhat demented.

Two days later he was transfused from his son; the blood flowed for 20 minutes and during this time the patient's hemoglobin rose from 12% to 25%, and his pulse fell from 112 to 92. Later in that day his hemoglobin reached 35 and there were 2,050,000 red cells. The next day the hemoglobin was 40 and the red cells 2,200,000.

Two days after the first transfusion I did a second from another son and so ran his hemoglobin up to 53 and his red cell count to 2,800,000.

The next day I removed the spleen. The organ was not enlarged, there were no adhesions, the artery was tied before the veins, silk was used, no difficulty was encountered. Nothing was palpably wrong in the other abdominal organs.

From this operation the patient made a normal recovery. The parasthesia in the hands and feet lessened, more in the hands. The hemoglobin continued to rise and three weeks after the splenectomy it was 70, the red cells remained 2,800,000.

Two months later the hemoglobin was 92. Red cell count 3,500,000, numerous megalocytes, occasionally a red cell contained one, sometimes two, small colloid bodies taking the basophilic stain by Wright's method, the so-called Howell-Jolly bodies. The white count was 8,200.

This count in the end of January, 1915, three months after the splenectomy, was the high tide of the improvement. From that time all counts showed him to be failing. His blood picture showed this, and his conduct in all particulars did the same. He complained especially of the parasthesia which reached from his hands to his upper arms and from his feet to his waist, and as a phase, I think, of this he told of a dragging in his abdomen.

After going down hill six months he had hemoglobin 45%, red cell count 1,400,000, many megaloblasts and megalocytes and a few poikilocytes.

In September he returned very weak, dyspnoeic on slight exertion. The parasthesia was his chief complaint: it included the hands to the wrist, and the feet and legs, etc., up to the waist. He again complained of the dragging inside.

His hemoglobin was 20%, red cells 1,000,000, white 4,000, the reds showed the same characteristics as before, but no Howell-Jolly bodies were found. Purely as a temporary measure I transfused him again from his son. The father could live for a while on the son's blood, and the son was wholly willing to give it. By this we ran the father's hemoglobin up to 30, the parasthesia left the hands and only extended up so far as the knees from the feet. The improvement was not as much as I had hoped for, but the blood clotted in the tube after 20 minutes of running and so stopped the transfusion and I did not think it fair to the son to make another connection. The gain lasted only a short time and then he began to fail rapidly. But he was anxious to live and returned in November with two daughters to have more transfusions, but these I advised against, though I did have the hemolysis possibilities studied.

His hemoglobin was but 10, his red cells 500,000, they were very irregular in size and shape. No nucleated cells seen. The white cells were 3,000.

He died about 13 months after the splenectomy.

Thursfield and Gow, St. Bartholomew's Hospital Reports, Vol. L, Part 1, Article, Splenomegaly —Splenectomy, quote the fact that the spleen is not an organ essential to life, and Noguchi's blood studies on one man who had lost his spleen —not a pernicious anemic—in whom he noted first a "diminution in the total number of the polymorphonuclears . . . and increase in the absolute numbers of the lymphocytes . . . and that the eosinophiles are increased; and that later

still the blood picture resumes a perfectly normal state." They quote and experience variations from these studies, and finally conclude that the effect on the blood varies in different individuals and instances; usually there is a quick increase in both reds and whites with a gradual return to near the norm, but with tendencies in the direction pointed out by Noguchi.

In pernicious anemia they quote Eppinger, Klemperer and Hirschfeld on the indication for splenectomy. "Eppinger's view may be stated as follows: The iodine number of the blood fat varies: it is at a minimum after experimental splenectomy; it is at a maximum after poisoning with toluylene diamine. In human beings high iodine numbers are found in all hemolytic processes. Secondly, the normal urobilin content of the stools is about 0.15 grm. per diem. In hemolytic diseases it is enormously increased, to 3 or 4 grm. per diem. In hemolytic icterus the effect of splenectomy is to lower both the output of urobilin and the iodine number of the blood fats. Eppinger therefore believes that splenectomy is indicated in all patients in whom these phenomena are present, holding that they provide an index of the morbid hemolytic influence of the spleen."

Klemperer and Hirschfeld, on the other hand, believe that removal of the spleen provides a stimulus to the hemopoietic functions of the bone marrow, and that the normal function of the organ is to regulate the production of the erythrocytes. Its removal, they point out, tends often to the appearance of a polycythemia.

Eppinger therefore can hope for a permanent cure of the disease; Klemperer would expect only an improvement in the blood condition. Hirschfeld states plainly that splenectomy is only a symptom remedy.

Thursfield and Gow refer to 21 cases of splenectomy in pernicious anemia which they have traced. They quote no absolute cures. They point out the long periods of improvement and that in the exacerbations treatment will often inaugurate a remission; when that does not follow it may be inferred that the patient is entering the final phase, and splenectomy may offer a release from this, inaugurate another remission and so prolong life and even an active life for a limited time at any rate.

Dr. H. C. Moffitt in *The American Journal of the Medical Sciences,* December, 1914, quotes the same authorities and to the same effect. Eppinger bases the indications for splenectomy on increased urobilin in urine and stools as an index of pathologic hemolysis, and "has pointed out that the iodin content of the blood after the removal of cholesterin and cholesterin esters runs fairly parallel to the degree of pathologic hemolysis. Eppinger reported five splenectomized patients after times varying from a few days to nine months, in all of whom there were icteric coloring and large quantities of urobilinogen in the stools. In these cases splenectomy stopped the blood destruction." Moffitt saw one of these patients six months after the operation, and while he had gained weight and had returned to business, his color was not normal and his blood was still of the megalocytic type.

Of Klemperer and Hirschfeld, Moffitt says, "the theory is advanced of some normal regulating function of the spleen upon the activity of the bone marrow; after the removal of the spleen, particularly when diseased, this inhibition is released and normal and abnormal erythrocytes are thrown rapidly into the circulation. In nine cases there were great numbers of normoblasts and erythrocytes with Howell-Jolly bodies in the peripheral blood. In one case seven months after the operation megalocytes were prominent in the blood picture and there was no difficulty in recognizing the pernicious type. The authors agree that splenectomy may bring about a remission when other means have failed, but Hirschfeld states plainly that 'splenectomy is only a symptom remedy.' "

In all Moffitt records thirty-three cases with full reports of clinical and laboratory findings. Of these, eight died immediately or soon after operation. Of the remaining twenty-three many improved rapidly in most all particulars, but none lost their pathologic blood picture, and while many of their symptoms were ameliorated they were none of them restored to health, for the most that he can say for the operation is that "cases are reported apparently cured after periods of three to nine months (Mosse, Eppinger); but the time is much too short to permit any such statement.

Moffitt argues that splenectomy may be counted on with fair hope to bring about a remission when other means have failed.

There have been a number of these cases reported in the past year but the time forbids their being drawn into this paper. I may merely cite Percy's report of five patients in whom he used the technic I had tried, viz., massive transfusion and then the splenectomy. One of these he cites as being satisfactory, and the other had been too recently operated upon to permit any deductions.

In the case of my report the result certainly showed that the splenectomy had but a temporary effect. That it did have some effect I am sure, for the patient was failing though under active treatment and so can be assumed to have been in the terminal phase when splenectomized. He had two massive transfusions, but their effect alone, at the best, could not have been expected to have lasted more than three weeks, while the patient gained steadily for three months after the splenectomy and did not get into a desperate condition for five months more, so that the method and the operation seem to me to have been to some extent justified.

Mr. H. G. Brown: Died November 28, 1915; autopsy November 28, 1915.

Man about 50 years old, poorly nourished, emaciated, skin dry, light brown hue, no edema, no jaundice. Skin and visible mucous membranes very pale, superficial lymph glands not enlarged. Hair partly gray, pupils equal, not dilated, nose normal. Teeth good, well preserved and kept,

tongue pale, coated, scars from transfusion operations at both elbows. Long white scar on abdomen in left mammary line from costal border to below level of umbilicus. Abdomen flat. External genitals normal. Thin layer of submucous fat, bright yellow color. Muscles very pale and dry, have a waxy appearance, rigor fairly well marked, beginning calcification of costal cartilages. Abdominal viscera: flexure and adjoining parts of transverse and descending colon bound to under-surface of abdominal scar near the upper third by long, quite firm adhesions. Omentum drawn up and attached firmly in the same place. No other adhesions in the abdomen. Spleen absent. No adhesions in or near the splenic region. No fluid in abdomen. Peritoneum dry. All viscera very pale. Right kidney normal size. Capsule very slightly adherent. Surface smooth, cut surface very pale with a yellowish tint. Markings normal, ureter normal. Right suprarenal normal. Left kidney and left suprarenal same as right. Bladder contains small amount of pale, cloudy urine, mucous membrane pale. Seminal vesicle full of albuminous thick fluid, prostate apparently normal. Urethra normal. Sigmoid and rectum empty. Adherent thick mucous to the pale mucous membrane. Colon empty except for small, hard masses of material resembling charcoal. Cecum full of bile-stained liquid. Appendix small and atrophic. No adhesions. Ileum, jejunum and duodenum empty except for small amount of bile-stained mucous. Small mucous membrane in the lower ileum, very thin. In this region the muscle wall is also very thin. Stomach small, contains small amount of thick mucous. Stomach mucosa thin, smooth and very pale. No hemorrhages anywhere seen, no ulcers. Bile duct open. No parasites found. Pancreas very pale, otherwise normal. Liver at margins of ribs, normal size, surface smooth. Cut surface very pale, centers of lobules stand out plainly as though pigmented. Diaphragm: 5th rib right, 6th rib left. Right pleural cavity almost entirely obliterated by old form of adhesions. Right lung, old scar at apex, the whole lung very edematous. Bronchioles filled with frothy liquid, very numerous, very small bronchopneumonia patches. Left lung same as right, except no adhesions. About 300 cc. clear fluid in left pleural cavity. Heart: no fluid in pericardium, heart normal size. Small post-mortem clots in cavities, valves normal, right ventricle, 6 m.m.; left 11 m.m. Cut surface flabby, numerous small, light yellow, pin-point spots in the muscle wall especially well shown beneath the endocardium in wall of left ventricle. Aorta normal. Thoracic and abdominal vessels normal. No visible enlargement of any of the abdominal or thoracic lymph glands except the peribronchial lymph glands which are anthracotic. No gall-stones. Gall-bladder normal. No thymus remnant found. Thyroid small, posterior capsule very adherent to trachea. Cut surface very solid and dry. Bone marrow of rib very soft and pale red color. Spinal cord quite firm meninges; pale, otherwise normal. Cut surface of cord apparently normal markings.

Anatomical diagnosis: Pernicious anemia; atrophy of intestinal mucosa; brown atrophy of liver. Fatty degeneration of heart; old adhesive pleurisy on right; edema of lungs, with terminal bronchopneumonia.

St. Luke's Pathologic Laboratory.

Pathologic report December 6, 1915.

Section of lung shows very marked edema.
Section of thyroid gland shows atrophy and fibrosis.
Section of heart muscle shows extensive fatty degeneration and beginning brown atrophy.
Section of prostate shows marked fibrosis.
Section of stomach shows atrophy of the mucous membrane.
Section of liver shows marked brown atrophy in the centers of the liver lobules. Much fat in the fine droplets about periphery of the lobules.
Section of gall-bladder shows mucous membrane atrophic.
Section of kidney shows numerous small scars in the cortex in which are collections of leukocytes. The glomeruli in these scars show hyaline degeneration of the capsule. The capillary loops are intact. Much interstitial fibrous tissue between the collecting tubules. Most of the tubules are filled with granular material.
Sections of spinal cord show no lesion.
Section of suprarenal capsule show no lesion.
Sections of aorta show normal structure.
Section of small intestine in the lower ilium shows atrophy of the mucous membrane.
All sections show severe anemia.
Smears of bone marrow show many nucleated red cells, some very large, some small and irregular.
Many myelocytes, few of which contain eosinophil granules.
Diagnosis: Pernicious anemia; fatty degeneration of the heart; atrophy of all organs; arteriosclerotic kidney.

Discussion.

Dr. H. C. Moffitt: I would like to say that I think it wrong to consider pernicious anemia as a disease of the blood. If we regard it so, we will miss a number of cases.

I saw an interesting man to-day and, queerly enough, he comes from near Tulare. His blood count was normal in October. From the nature of his paresthesia you would have to regard him as a man who would probably have pernicious anemia. To-day his red cells are not as large as we usually see, but are well above normal, and the blood picture is otherwise that of pernicious anemia. The paresthesia began in the typical way and jumped suddenly from ankle to knee, knee to waist. Paresthesias like this (apart from a few disseminated spinal cord lesions) outside of pernicious anemia are extremely rare.

The cases of disseminated spinal cord lesions described by Batten and Collier have, many of them, a terminal blood picture of pernicious anemia. Lesions in the spinal cord, stomach and intestines are quite as important as lesions in the bone marrow, and for this reason it seems to me wrong to talk of splenectomy as a possible cure for pernicious anemia. It will, as Dr. Sherman says, give us one method of bringing about remissions, but it is almost impossible to say when a patient with pernicious anemia will not spontaneously have remissions.

If we do advocate splenectomy, we must realize thoroughly that we are relieving one phase of the disease—the action of spleen on bone marrow, but are not at all reaching the fundamental cause of the disease.

Dr. P. H. Pierson: I have been interested in this subject, especially in the urobilin output, which was studied in a dozen cases on the services of Dr. Edsall and Dr. Cabot of the Massachusetts General Hospital. Dr. Robertson did the work by the Wilbur and Addis method, by extracting the urobilin from the 24-hour stool with acid alcohol, and diluting this extract until the characteristic spectroscopic absorption bands of urobilin disappeared (about 5000 dilution in normal individuals). In the pernicious anemia cases studied, they found the dilutions ran up as high as 16,000 to 46,000. The effect of salvarsan on this urobilin output was practically nihil. Transfusion seemed to increase temporarily the amount of urobilin output because of the stimulation of the bone marrow. After splenectomy the urobilin dropped in four out of five cases to practically normal. One went below normal to 3500. In one other case the amount had risen considerably a few months later, and that case was not doing well. In summing up his article, he advocates the use of urobilin estimation (which shows the amount of blood destruction) to indicate whether splenectomy is advisable. Cases with spinal cord manifestations were not splenectomized because of the probably unfavorable results that would take place.

Closing discussion, Dr. Sherman: There is very little for me to say. I do not think for a moment that splenectomy can be considered more than an inaugurator of remission when nothing else will do it. If the individual is going into the terminal

phase in spite of treatment, it is perfectly fair, it seems to me, to advocate it.

I will have to acknowledge that in this patient no test of the uroblin output was made nor of the fragility of the blood cells.

One point interested me, although I do not fully know its value, and that is the Howell-Jolly bodies in the blood. There were relatively few in this instance, and if their presence indicates, as it may, a speeding up of the blood-making function and the calling out of the young cells earlier than normal to fill the ranks in the vessels, their absence would possibly mean a failure at the very point of origin of the red cells—a failure to generate reds rather than a too rapid destruction of them.

SOME UNUSUAL ASPECTS OF EXOPHTHALMIC GOITER.*

By GEORGE D. BARNETT, M. D., San Francisco.
From the Medical Division of the Stanford Medical School.

With the great increase in pathological and experimental work on exophthalmic goiter during the past few years the focus of attention has shifted somewhat from the field of diagnosis to that of pathogenesis, in which our interest has recently been aroused by the stimulating suggestions of Rosenow and Billings. A decade ago the prominent subjects in thyroid literature were early diagnosis, obscure points in diagnosis, formes frustes, etc., yet in spite of the thoroughness with which the question of diagnosis has been exhausted, there is apparently a considerable number of fairly well-marked cases of hyperthyroidism in which the diagnosis is not made, or is greatly obscured by the undue prominence of certain of the less common symptoms. The cases here reported may serve to point out the possibility of such diagnostic error, and to emphasize again the necessity of keeping the thyroid in mind in considering many rather obscure clinical pictures.

Case 1.—Miss F., student of 21 with unimportant family and past history, consulted her family physician in January, 1915, complaining of loss of appetite and malaise. She was found to have a temperature of 103.4; white blood count 9600; Widal negative. Urotropin was given. After a few days began to have frequent burning urination, and blood was discovered in the urine. Temperature rose to 100-103 every afternoon. Tuberculosis of the urinary tract being suspected, the urine was sent to a laboratory for guinea-pig inoculation, and four weeks later the laboratory reported positive tuberculosis. A diagnosis of tuberculosis of the kidney was made, but on account of the absence of any indication of tuberculosis in the ureteral urines, the patient was brought to the hospital in May, 1915, for further investigation.

Physical examination showed a small, well-developed young woman. Thyroid moderately prominent. Marked vasomotor flushing about chest. Pulse 100-124. Systolic blowing murmur at cardiac apex. Slight general abdominal tenderness. Tremor of hands. Knee-jerks lively. Urine 1.011 with trace of albumin and rare hyaline cast. White blood cells 8500: polymorphonuclear 57%, lymphocytes 40%. Hemoglobin 70%. Afternoon temperature 99 to 99.5. Cystoscopic examination showed mild cystitis and some things suggestive of pyelitis. Guinea-pig inoculations negative.

In this case, the rather striking fever at onset naturally occupied the attention of the attending physician, and the attempts to explain it on the basis of kidney infection and to influence that infection by means of hexamethylenamine totally obscured the picture of hyperthyroidism that was doubtless developing during the weeks before the patient came to the hospital. With prolonged rest, overfeeding, hydrobromide of quinine and a discontinuance of bladder therapy there was practically complete relief from symptoms.

Case 2.—Miss W., schoolteacher, complaining of nervousness. Has had five attacks of pneumonia, and has had occasional periods of loss in weight, nervousness and irregular menstruation, but has been able to continue her work. Past history otherwise unimportant. In the summer of 1914 she began to be troubled with nervousness, cardiac palpitation and marked tremor, and lost ten pounds in weight. Physical examination at this time showed slight prominence of eyes, slight enlargement of thyroid; heart rate 120 with systolic blow at apex. A diagnosis of hyperthyroidism was made, and with prolonged rest, quinine hydrobromide, iodine ointment applied over the gland, and a copious non-irritating diet, improvement was marked.

Patient remained practically well up to the middle of January, 1915, when she had an apparent influenza infection for several days, with considerable fever, cough, and some rales in right chest. Was in bed two weeks, the fever continuing, at times as high as 102.5. Pulse 110-120. At the end of this time the temperature fell to normal, the pulse remaining 90 to 100. After a week or so the temperature again rose, and for a period of three weeks reached 100 to 101 each evening. A marked increase in the size of the thyroid was noted with the second rise in temperature. She continued to lose weight, had some sweats, considerable tremor and rapid heart action. White blood count 3700: polymorphonuclears 56%, lymphocytes 36%. Urine normal. X-ray of chest showed nothing positive. Following x-ray treatment of the thyroid, the gland was reduced to about half its former size and became firm, with well-defined borders. Leucopaenia throughout. Widal negative. With continued rest in bed, iodine ointment and quinine hydrobromide in addition to the x-ray therapy, there was gradual improvement. Temperature fell to normal after about three weeks, and remained so except for an occasional transient rise to 99 or 100. Pulse 90 to 110 throughout. Patient left the hospital after four months, weighing more than ever before. No sweats. Eyes practically normal. Thyroid firm and small. No heart murmur. Very little tremor. Has remained well to the present time.

Here, again, without a definite knowledge of the previous attacks, one might well be misled by the striking temperature chart; and of course at the onset of such an attack as the last one the diagnosis must be held in abeyance until all the more usual causes of fever can be excluded.

The question of the frequency and extent of temperature elevation in exophthalmic goiter is one in which there is still difference of opinion. Bertoye, who in 1888 first made a detailed study of the matter, concluded from an analysis of a considerable number of cases that moderate transient fever is of frequent occurrence, and may be found at the onset, during the course of the disease, or only terminally. Kocher, on the other hand, does not consider that fever is a part of the picture in exophthalmic goiter at all, and agrees with Mackenzie that a temperature over 100 is exceedingly rare. In this country, casual mention is made by Barker, and in the papers from the Mayo clinic, of occasional slight fever during the course of the disease, but no emphasis has been laid on its occurrence except by W. Gilman

* Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 20th, 1916.

Thompson, who, in fifteen, out of a series of forty-three hospital cases reported, found fever of 101 to 104. The fever he describes is "of septic type, oftenest remittent, but sometimes intermittent, always irregular, and occasionally remaining elevated three or four degrees for several consecutive days," in some cases several weeks. It is unaccompanied by change in blood picture or by local manifestations.

Whether the fever is of special significance in exophthalmic goiter, perhaps characterizing a group of cases of different etiology or different degrees of thyroid intoxication, or whether incidental intercurrent infection is to explain the temperature elevation in these cases; or whether, following the work of Rosenow and Billings, we are going to find all exophthalmic goiter to be of infectious origin—these are questions which the near future seems likely to answer. In any event it seems well to point out the possible role of the thyroid in cases of unexplained fever, especially in the absence of leucocytosis.

Cerebral nerve disturbance in exophthalmic goiter, to which attention has recently been directed by Heuer, are among the rarer manifestations of the disease. The following case belongs in this group:

Case 3.—M. D., Danish buttermaker of 33, admitted June 10, 1915, complaining of general weakness and double vision, of six weeks' duration. Family history unimportant. At 21 had swelling in right testicle diagnosed tuberculosis, and testicle was removed. Left testicle was also affected, but healed under open-air treatment. In 1910 had an attack of jaundice lasting three months with vomiting and general weakness but no pain. Recovery following drainage of gall-bladder. In 1912 had repeated attacks of "convulsive vomiting" during a period of two months. Developed very rapid pulse, exopthalmos, and general weakness. Partial thyroidectomy was performed at the San Francisco Hospital, with complete cure, except for slight residual prominence of the eyes. Patient remained well and at work over three years.

About May 15, 1915, six weeks before admission to the hospital, began to notice blurring of vision, followed shortly by persistent double vision. General muscular weakness began about the same time and progressed rapidly. Arms and legs fatigue rapidly, and he has noticed that after chewing a short time he is unable to chew any but the softest foods, and there is a tendency for fluids to run out the nose.

Physical examination showed well-nourished young man. On getting up from supine position lifts head with hands. Moderate exophthalmos. Eye movements limited in all directions. Left eye lags in all movements. Slight ptosis on left. V. Graefe, Moebius, Stellwag present. Distinct weakness of muscles of mastication. Moderate enlargement of left lobe of thyroid. Right lobe apparently removed. No abnormality noted in heart and lungs. Operative scar right rectus. Right testicle gone. Slight fine tremor of extended hands. Tendon reflexes normal. Gait weak, cautious. No spasticity. No ataxia. No Romberg symptom. Stereognosis normal. Some general weakness of skeletal muscles throughout. Deltoids, triceps, scapular muscles, hamstrings and thigh muscles seem to be more affected than the more distal groups. Apparent slight atrophy of supraspinati.

Electrical reactions: No R. D. Both triceps muscles show rapid, though incompelete fatigue to faradic stimulation (interruption 60 per minute). X-ray examination showed normal sella turcica, no evident enlargement of thymus. Urine on one occasion showed trace of sugar and a few finely granular casts. Blood: white cells 5100; polymorphonuclears 51%; lymphocytes 39%. Wassermann negative.

There is here an obvious hyperthyroidism, and in addition many of the symptoms of myasthenia gravis. The relation between these two conditions is an interesting one. Cases of Graves' disease with marked general muscular weakness, with eye muscle paralysis and other bulbar symptoms have been occasionally described for many years; and on the other hand cases of true myasthenia gravis now and then occur with exophthalmos, tachycardia, tremor, and other minor manifestations of hyperthyroidism. Often, as in this case, there is such a confusion of the two pictures that it is difficult to say which is the predominant one. Thus we have here goiter, tremor, exophthalmos, with recovery following operation, and marked eye signs—a striking picture of Graves' disease; and in addition such extensive muscular weakness involving especially the eye muscles and those of mastication and deglutition, with distinct though incomplete faradic fatiguability of both triceps, that a diagnosis of myasthenia gravis seems necessary.

The patient left the hospital, and except for occasional slight remissions, themselves characteristic of myasthenia gravis, became progressively weaker during the following five months. He returned in November, 1915, and died shortly after admission, with acute respiratory failure. Autopsy by Dr. Ophuls showed healed tuberculosis of the lungs; healed tuberculosis of the right kidney (unsuspected during life); healed tuberculosis of testis, with marked atrophy. Thyroid showed marked epithelial proliferation with several areas of round-cell infiltration. Parathyroids not found. No focal lesion in brain tissue.

In this connection it is of interest to recall the possible role of the parathyroids in the etiology of myasthenia. Following the discovery of the parathyroids and the relation between parathyroid insufficiency and tetany there was naturally a search for the condition which parathyroid hyperfunction might be expected to produce. Such a condition was found in the long recognized syndrome of myasthenia gravis, which, as Chvostek remarks, bears the same relation to tetany that the negative does to the picture. And considering the anatomical and functional relationship between thyroid and parathyroids, if myasthenia is hyper-parathyroidism, it is not surprising that it is occasionally associated with hyperthyroidism. However, the objections that have been raised to Chvostek's hypothesis: that in the manifest cases of myasthenia gravis that have come to autopsy, no anatomical evidence of parathyroid hyperfunction has been found; and that successful parathyroid grafts do not produce the slightest evidence of myasthenia in animals—these points must be considered, and leave us again in a state of haziness as to the nature of the condition and the cause of its occasional coincidence with exophthalmic goiter.

It is perhaps worth noting in our case, that

preceding the onset of any of the symptoms there was disease of both testicles necessitating removal of one of them, and producing atrophy of the other. Cases of myasthenia gravis with sexual infantilism have been described. In the present state of our knowledge of the inter-relation of the internal secretions we can only say that we have here a possible initial factor disturbing their equilibrium.

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DISABILITY FROM INJURY TO THE FEET.*

By G. J. McCHESNEY, M. D., San Francisco.

As one of the Medical Referees for the Industrial Accident Commission, I have examined twelve men who have claimed disability from injuries to the feet.

They have exhibited in all sixteen fractures, as follows: Six of one or both malleoli, four of the astragalus, two each of the os calcis and cuneiform, one each of the scaphoid and fifth metatarsal.

Now, this may not seem a series long enough upon which to base any conclusions, but they have been quite instructive to me, and I hope to make them a little so to you.

Their ages varied from twenty-eight to seventy-one, the average being forty-two—men therefore in the prime of life.

The examination was made on an average of eight months after the injury, surely time enough to get a fair estimate of the end results, and these end results were uniformly worse than they should have been.

This is an important point I wish to emphasize; we are not doing our best by this class of injuries. Of course one can say that a referee sees only the bad results, and the good results have no points in dispute requiring his services. This may be so, but there are too many similar results in the practices of all of us, wherein the results should be better than attained at present.

In all the cases seen by me, some ankle-joint motion was always present, was normal in most, and showed little evidence of unskilful treatment. We know that if the astragalus is uninjured, no ankylosis of the ankle-joint is possible, and even if severely fractured, some motion is always possible. This was well shown in one case, where the astragali were badly crushed. The sub-astragaloid joint, however, does not escape so easily. I am convinced that the important role of this joint is lost sight of in over-attention to the more conspicuous ankle-joint above it, which rarely causes trouble. In all these foot injuries seen by me, restriction of sub-astragaloid joint motion furnished most or all of the basis for complaint.

This joint, situated between the os calcis and astragalus, permits a lateral and twisting motion of pronation and supination of the os calcis, which carries the rest of the foot with it through the articulations of the astragalus with the scaphoid and the os calcis with the cuboid. When this joint is fixed by muscle spasm in a pronated position, the so-called rigid flat-foot, or even if a *little* motion is permitted, we have inability to walk upon *rough* ground, *uneven* surfaces, etc., without severe or excruciating pain, as the ability of the foot to accommodate itself to such inequalities is lost. This is not so great a handicap to sedentary city dwellers, walking only upon pavements, but to laborers of all sorts, ladder-climbers, weight-carriers, etc., the disability is well nigh complete. Some, less severely disabled, could walk upon smooth surfaces with no trouble, putting most of the weight squarely upon the heel, but found it impossible to walk comfortably upon uneven surfaces, climb ladders or stairs, do balancing acts, carry weights, etc., thus barring from a status of efficiency all workers except those at benches or desks.

In the malleolar fractures—three Potts, and three fibula alone without fracture of the tarsal bones—the universal mistake had been made of not keeping the proper weight-bearing position of the foot in mind, i. e., slightly supinated or twisted inwards at the sub-astragaloid joint, to throw the weight to the outer side of the foot, where it belongs, and to relax and protect the internal lateral and calcaneo-scaphoid ligaments by holding up the arch. Of course it is not enough to put the foot into this position while the fracture is healing, but in the more crucial period of beginning weight-bearing a high arch-support is very necessary, maintaining this position till the internal lateral ligament and accompanying muscles have shortened and regained their tone, and spasm of the peroneal muscle group has disappeared.

To thus restore the balance of muscles moving the sub-astragaloid joint should not take over two or three months in the simple malleolar fractures, but when the astragalus or os calcis is fractured, unless most skilled and prompt efforts are made to preserve the integrity of this joint, whose importance I have endeavored to set before you, we have a man crippled permanently for all but the slightest occupations.

It has been said that everything in this life is a matter of degree. To fall upon your feet is an expression for good luck, but let us add when the fall is less than ten feet! Over that height it can signify a crippling of the most painful sort.

In the fractures of the os calcis and astragalus—all caused by falls of from ten to thirty feet and landing upon the feet—the predominant symptom was pain and disability referred to the sub-astragaloid joint.

In none of the cases of fractured os calcis or astragalus seen by me, had the treatment been anything more than conservative and expectant. This is wrong. In no case of fracture should more strenuous and repeated efforts be made to secure anatomical restoration of the parts. The average surgeon is usually particular enough to get anatomi-

* Read before the San Francisco County Medical Society, August 15, 1916.

cal replacement of a long bone where X-ray shows deviations of a small fraction of an inch, but in the tarsal bones, with their confused outlines of cleavage and fracture, and where normally there is overlapping and complex relations of various bones, he is too apt to put on a cast or adhesive strapping, and trust to luck, so long as the external appearance is normal, which it usually is.

On the contrary, repeated efforts should be made to secure an anatomic reposition, always bearing in mind the importance of the sub-astragaloid joint. Each effort should be checked up by the X-ray, using the sound foot for comparison. We can compress or manipulate the fragments, use small nails to hold fragments in place, cut the tendo-Achilles, and do everything possible to get anatomic restoration of the fractured surface, as shown by the X-ray. We know that fractures extending into a joint require the greatest skill and nicety of reposition to get good results. Nine out of ten fractures of the astragalus and os calcis extend into this joint that, although not permitting much motion, yet bears more weight than any other joint of the body. Consequently, if we are just as particular here as anywhere else, then and then only can we hope for a minimum of restriction and muscle-spasm around the sub-astragaloid joint, and consequent pain and disability.

In a recent article by Cotton upon "Results of Fracture of the Os Calcis," after examining twenty-eight cases of compression fracture, due to falls, his conclusions are as follows: "Os calcis fracture is of as serious prognosis (not as to life, but as to use), as fracture of the femur at the hip. Ordinarily speaking, the man who breaks his heel-bone is 'done' so far as his industrial future is concerned."

"Late operations for correction are useful, but far from ideal in results; palliatives (plates, pads, braces and shoe modifications) are usually useless."

"Early conservative treatment gives incredibly poor results."

I saw two cases of direct violence to the foot—one causing an anterior dislocation of the astragalus and foot with it upon the tibia, and the other a bad crush by a heavy pipe. The former had been competently cared for and the dislocation almost completely reduced, but the tenderness at the sub-astragaloid joint will probably require an arthrodesis to cure. Sub-astragalar arthrodesis for paralytic feet in children has given good results, and I see no reason why it should not give a painless weight-bearing mechanism here. The other case had already gone on to arthrodesis of the ankle-joint, but this has to be done over again, as the foot was supinated too much for weight-bearing, and placed too far forward upon the tibia. The important point to remember in an ankle-joint arthrodesis is to put the foot as far back as possible upon the leg, and in a position midway between pronation and supination, in order that when standing, the foot may come squarely upon the ground.

The accompanying fractures of the scaphoid, cuneiform and fifth metatarsal bones, seen in this series, presented no especial features of interest to the patients, and hence would not to you.

THE THERAPEUTIC APPLICATION OF HYPERTONIC SALT-SOLUTION IN CONJUNCTION WITH LEUCOCYTIC EXTRACT.

By R. A. ARCHIBALD and GERTRUDE MOORE, Oakland, Cal.

(From the research department of The Western Laboratories, Oakland, California.)

The question of the relative therapeutic values of leucocytic extract (Archibald) introduced subcutaneously and that introduced intravenously, alone or in conjunction with various hypertonic salt solutions with special reference to its application in the treatment of cases of infections of the blood stream was first called to our attention, by a case of streptococcemia in which a two per cent. magnesium sulphate solution was administered according to the technic of Harrer, together with leucocytic extract which was given as usual subcutaneously. The beneficial effects of this combination were quite marked.

In this case, a post operative septicemia, 400 c.c. of a two per cent. solution of magnesium sulphate given intravenously was used, as soon as a blood culture revealed the presence of the streptococcus, with no benefit. White blood counts before and after the magnesium sulphate solution injections were uniformly low, a fact indicative of a particularly grave prognosis. In order to stimulate an increase in the activity of the leucocytes, leucocytic extract was given in doses of two cubic centimeters daily for a number of days. Following the use of the extract alone there was an increase in the white count of from six to seven thousand to twelve or thirteen thousand, but no marked leucocytosis was obtained. At this time the administration of magnesium sulphate was resumed in conjunction with the Leucocytic Extract with an immediate and decided increase in the leucocyte count and marked improvements in the physical condition of the patient, who continued to improve and went on to complete recovery.

In this case there was no question but that the combination of these two agents was responsible for the improvement and that neither one alone was able to benefit the condition.

A study with a view of explaining the phenomena incidental to this case was undertaken in animals.

It often happens that various products having a therapeutic value when given subcutaneously are more prompt and extensive in their action when injected intravenously. This is true of many substances which produce a leucocytosis because of a high protein content as in the use of nuclein, blood sera, etc., so the question naturally arose in this connection, whether or not intravenous injections of leucocytic extract would produce an increase in the white blood count similar to that produced by a subcutaneous injection, inasmuch as it differs from the above noted products in not being dependent on its protein content for its action.

In order to clear this point up a series of rabbits were injected with the same lot of leucocytic

* Read before the Medical Research Society of East Bay Counties, Oakland, Cal., October 21, 1916.

extract, one-half being given a dose intravenously, the other half subcutaneously.

For the sake of illustration the following tables show the result of one of these experiments.

TABLE I.

Rabbit No. 5 was given two cubic centimeters leucocytic extract subcutaneously immediately after the first blood count was taken.

Time	W.B.C.	L.M.	S.M.	Poly	E.	B.
9:00 A. M.	7,200	13	47	36	4	0
11:00 A. M.	5,300	12	46	40	1	1
1:00 P. M.	8,500	4	36	59	1	0
3:00 P. M.	9,000	4	42	47	7	0
5:00 P. M.	16,200	10	18	68	4	0
7:30 P. M.	15,000	8	29	63	0	0
9:00 A. M.	10,300	12	34	47	7	0

TABLE II.

Rabbit No. 6 was given two cubic centimeters of the same lot of leucocytic extract as in the case of rabbit No. 5 intravenously.

Time	W.B.C.	L.M.	S.M.	Poly	E.	B.
9:00 A. M.	7,466	9	16	72	1	2
11:00 A. M.	13,600	16	8	75	1	0
1:00 P. M.	23,500	6	13	78	3	0
3:00 P. M.	18,200	10	18	62	10	0
5:00 P. M.	10,000	9	17	68	6	0
7:30 P. M.	6,000	9	24	63	4	0
9:00 A. M.	8,000	9	16	71	3	1

From the above experiments it will be observed that as a result of the injections of leucocytic extract of the same lot and under the same conditions into two rabbits the one intravenously and the other subcutaneously blood changes are obtained which are in a general way similar, but differ as to the rapidity and intensity with which the changes takes place.

In the case of the rabbit receiving the extract intravenously an increase in the total leucocyte count of one hundred per cent. occurred within two hours after injection, and the maximum of two hundred per cent. in the total leucocyte count was noted within four hours after injection. This count rapidly fell to a point slightly below the original count within ten hours after the dose was given, while with the rabbit given the same amount of the same lot of Leucocytic Extract subcutaneously no definite increase in the blood count was noted before the eighth hour, the maximum being reached about the tenth hour, with the count remaining considerably above the normal twenty-four hours after treatment.

In other words, when leucocytic extract is given intravenously a rapid and marked increase in the blood count is obtained with as rapid a drop to normal, while the administration of the same agent subcutaneously results in a slower and less marked reaction but one which is prolonged over a much greater period of time.

It occurred to us at this time that if magnesium sulphate was of benefit in connection with leucocytic extract that it might be profitable to make a combination of the two products during their manufacture thereby minimizing the technic of administration and at the same time exalting the potency of the leucocytic extract. It was reasoned that since magnesium sulphate was of such great assistance in leucocytotherapy that a saturation of leucocytic extract with magnesium sulphate might yield a product which, when diluted with three to four hundred cubic centimeters of water, would be ready for intravenous injection, but upon animal experimentation such a combination was found to be inert.

Following this a study was made of the effect on animals of intravenous injection of these two agents simultaneously and this combination was also found to be unsatisfactory. On the other hand, a potent leucocytic extract injected subcutaneously together with an intravenous injection of magnesium sulphate always produced a marked reaction as did leucocytic extract and magnesium sulphate both given intravenously provided the two were injected at least one-half hour apart.

The following protocols demonstrate the above stated facts:

Rabbit No. 66 was given a mixture intravenously of 2 c.c. leucocytic extract in 40 c.c. of a 2% magnesium sulphate solution +0.3 grams calcium chloride to the liter. Blood counts made at the 8th and 24th hours failed to show any effects upon the blood pictures.

Rabbit No. 67 was given simultaneously 2 c.c. Leucocytic extract subcutaneously and 40 c.c. of a 2% solution of magnesium sulphate + 0.3 grams calcium chloride to the liter intravenously. Blood counts made at the 8th and 24th hours showed a 100% increase in the total leucocyte count.

Rabbit No. 68 was given one-half hour apart 2 c.c. Leucocytic extract and 40 c.c. of a 2% magnesium sulphate solution + 0.3 grams calcium chloride to the liter intravenously. Blood counts made at the 8th and 24th hours showed a 100% increase in the total leucocyte count.

Rabbit No. 69 was given intravenously at the same time but not mixed 2 c.c. Leucocytic extract and 40 c.c. of a 2% magnesium sulphate solution + 0.3 grams calcium chloride to the liter. Blood counts made at the 8th and 24th hours failed to show any change in the blood pictures.

Rabbits Nos. 70 and 71 were given two cubic centimeters leucocytic extract subcutaneously and intravenously. Blood counts made at the 8th and 24th hours showed respectively 105% and 130% increase in the total leucocyte count.

In these experiments the reactions were at no time greater than the reaction obtained with leucocytic extract without magnesium sulphate but in a series of rabbits which had been intravenously injected with a laboratory strain of a staphylococcus aureus the leucocytosis was invariably highest in those rabbits receiving both leucocytic extract and magnesium sulphate, second in those receiving leucocytic extract alone and lowest in those receiving magnesium sulphate alone.

The following protocols bear out these facts:—

Rabbit No. 83 was given 0.5 c.c. of a twenty-four-hour old bouillon culture of a staphylococcus aureus intravenously. On the fourth day after infection this rabbit was given simultaneously 2 c.c. leucocytic extract subcutaneously and 40 c.c. of a 2% magnesium sulphate solution + 0.3 grams calcium chloride to the liter intravenously. Blood counts made at the end of twenty-four hours showed a 160% increase over the white blood count taken at the time the extract was injected, or 600% increase over the white blood count before infection.

Rabbit No. 84, infected with a staphylococcus aureus as in the case of Rabbit No. 83, was given 40 c.c. of a 2% solution of magnesium sulphate + 0.3 grams calcium chloride to the liter intravenously and one-half hour later 2 c.c. of leucocytic extract subcutaneously. Blood counts made at the end of twenty-four hours showed a 175% increase over the white blood count made at the time the

extract was injected or 500% increase over the white blood count before infection.

Rabbit No. 85 was given 2 c.c. leucocytic extract subcutaneously and Rabbit No. 86 2 c.c. of the same extract intravenously. These rabbits had also been infected with a staphylococcus aureus. Blood counts made at the end of twenty-four hours showed respectively a 100% and 75% increase in the white blood counts, or about the same increase over the white blood count before infection.

Rabbits Nos. 87 and 88, infected with a staphylococcus aureus, were each given 40 c.c. of a 2% magnesium sulphate solution + 0.3 grams calcium chloride to the liter. Blood counts made at the end of twenty-four hours failed to show any change in the blood pictures.

From these experiments it is obvious that the value of leucocytic extract is exalted many times by the magnesium sulphate which in itself has apparently no effect.

The reason for these phenomena seem quite evident. In the case of injection with leucocytic extract we are dealing with an agent which produces a leucocytosis and at the same time, by virtue of it, a marked increase in the proteolytic ferment content of the tissues and tissue juices. These ferments are normally present, not only for the purpose of splitting complex proteins which may be in the tissues as a result of pathological conditions but also in order to take care of the ordinary products of katabolism. Consequently when leucocytic extract is given to a normal animal the increase in ferment content increases the nitrogenous end products to a definite point beyond which it is impossible to go because of a lack of available protein on which the ferment may act. The leucocytosis appears in response to a demand created by these nitrogenous end products and is therefore limited. On the other hand when given to an individual suffering from an infectious disease or a toxemia there is a great mass of protein material, the result of tissue and bacterial destruction, which must be digested before elimination can take place. In this case, after a dose of leucocytic extract with its coincident increase in ferment, digestion goes on rapidly, large quantities of nitrogenous end products are liberated and a consequent increase in the leucocytes results.

It is obvious, therefore, that the more rapidly these are produced, the more rapidly elimination must take place else the normal balance will be lost and pathological accumulation will occur. Normal elimination is, however, decreased in patients suffering from acute infections and toxemias owing to a swelling of the parenchymatous tissues of the excretory organs, which swelling is the direct result of the acid end products upon the colloids of the body. The administration of leucocytic extract increases the tissue and blood ferments and hence causes a more rapid splitting of these foreign proteins. These substances must be removed from the body, however, before recovery is complete and it therefore follows that any procedure which will increase the intestinal and urinary output will make for a rapid recovery.

Now it is a well established fact that whereas colloids, which in this case are the cells of the body, swell in the presence of all acids, this swelling is greatly inhibited if any salt be added to the acid solution, some salts being more efficacious in this regard than others. The most useful are the salts of magnesium, barium and calcium and of these the sulphates rather than the others, hence in magnesium sulphate we have a salt ideal in its power to inhibit the above mentioned action of acids on colloids. In this particular instance we have the kidneys, intestines, etc., on whose excretory powers there is a very heavy demand so altered by these end products as to markedly reduce their functioning power. The intravenous injection of magnesium sulphate inhibits the swelling of the kidneys, increases the urinary output and thus disposes of the waste, which permits the ferment, produced by leucocytic extract, to complete the cycle of its digestion.

In addition to the case of streptococcemia already mentioned the following are a few case reports selected at random showing the clinical application of the above outlined theories.

Japanese woman.—Five months pregnant, developed an acute pyelitis with marked constitutional symptoms. During the course of the pyelitis a colon bacillus septicemia developed. The administration of leucocytic extract subcutaneously and magnesium sulphate intravenously was begun immediately after two different blood cultures had shown the presence of a colon bacillus. Two cubic centimeters of leucocytic extract were given subcutaneously daily, while four hundred cubic centimeters of a two per cent. magnesium sulphate solution was administered intravenously every third day, three injections being given in all. A blood culture taken after the final injection of magnesium sulphate was sterile.

Mrs. B., puerperal sepsis. Chill and temperature of 104° on third day after confinement with a steptococcus present in large numbers within the uterus. Patient prostrate, appearing very ill. Leucocytic extract was given subcutaneously immediately followed in a few hours by 350 c.c. of a 2% magnesium sulphate solution intravenously. The temperature fell to 99° in the next twenty-four hours, leucocytic extract was continued daily and a second and last dose of magnesium sulphate was given two days later. In less than eighteen hours the temperature reached normal, where it remained, the patient making an uneventful recovery.

The clinical history of many other cases similarly treated could be recited but it is believed that the above will suffice to demonstrate that in the treatment of bacteremias the combined use of leucocytic extract and magnesium sulphate solution is worthy of serious consideration.

SUMMARY.

While beneficial results may be obtained from the use of leucocytic extract and magnesium sulphate solution alone, much more gratifying results are obtained by their joint use, provided, that if they are administered simultaneously the extract be given subcutaneously and the salt solution intravenously. If, however, both are given intra-

venously one-half hour at least must be allowed to elapse between the administration of each.

Leucocytic extract given intravenously gives its maximum white blood count in four hours after injection, while the subcutaneous injection shows the maximum increase from the eighth to the tenth hour. It was also demonstrated that the leucocytic increase following intravenous injection is more transient than when administered subcutaneously.

It is apparent that the joint action of the leucocytic extract and magnesium sulphate solution is intensified when administered in a bacteremic condition more so than in a normal individual.

In the treatment of all bacteremias the combined use of leucocytic extract and magnesium sulphate solution has proven to be more efficacious than any other treatment heretofore devised.

INTESTINAL CRISES SIMULATING CHRONIC APPENDIX DISEASE DIAGNOSED BY ROENTGEN RAY FINDINGS.*

By M. P. BURNHAM, M. D., and LLOYD B. CROW, M. D., San Francisco.

The marked obscurity of diagnosis in this case, which was finally cleared up by Roentgen findings, demonstrates quite clearly the value of the Roentgen examination as a "dernier ressort" method of diagnosis in all dubious abdominal complaints.

Mr. H. came under observation last February and had then been ill for a period of thirteen months. Age 45, unmarried. Occupation, a farmer, but had been in the liquor business for several years. States that during this time he had been a heavy consumer of alcohol in all forms.

Thirteen months before coming under our observation, he had consulted several local physicians, who had told him he was suffering from bright's disease and treated him for such, but showing no improvement he then consulted another physician in the same locality, who treated him symptomatically. Again not improving under this course of procedure, he consulted one of us. The following history was obtained:

The patient had always been a perfectly healthy man up to January, 1915. Somewhere about the first of January, 1915, he began to complain of a burning, scalding sensation in the eyes, which was attended with considerable lacrymation. Much stress was laid on this symptom by the patient and he stoutly persisted that every abdominal attack which he has had was always preceded by this phenomenon. Simultaneously with these morbid manifestations, he complained of jerkings in the facial muscles, accompanied by severe pain, which he described as rheumatic in character. He was also troubled with severe pharyngitis. About one week later he developed severe gas pains, coming on about noon, some six hours after eating his first meal of the day. They were so severe that he was unable to lie down, but forced to sit up for long periods of time as lying down caused him severe palpitation of the heart.

Three days after the onset of the gas disturbance he had a severe attack of terrible griping pains throughout the bowel, radiating to the lumbar region of the spine. This attack lasted over a period of two weeks. For several days following this attack he was free from pain. He states that he was always constipated before these attacks came on. Enemas and strong cathartics were of no value. His stools were usually quite dark and never clay colored. These attacks, always similar in character, occurred quite regularly about once a week up to about one month before consulting us.

A short time prior to his arrival here, he remembers that three hours after taking some medicine prescribed by his local doctor, he became distinctly nauseated, developing severe pain in the right side, accompanied by a frontal headache and later on vomited. For a period of twenty-four hours these attacks were repeated, the colics on the right side lasting from fifteen to twenty minutes. Prior to this time he had noticed that he had been troubled with cramps in the region of the appendix, but had paid no attention to it.

In describing his attacks of intestinal pain associated with gas, he stated that he was obliged to urinate every hour during the night and day. Ordinarily he would only urinate four or five times during the day and never during the night. For the past year he has complained of being constantly chilled. He has lost ten pounds since the attacks first came on.

Past history: States he had gonorrhea nine years ago, but denies ever having syphilis. He had malaria eight years ago, otherwise he has been a robust, healthy man until afflicted with his present trouble.

Family history: Negative. Mother is well. Father died of old age. Several brothers and sisters living, who are all well.

Habits: Has been a heavy drinker prior to one year ago, also a consumer of about fifteen cigarettes a day for about twenty-five years. Physical examination revealed a slight amount of tenderness over the region of the appendix, otherwise negative.

Fundi were negative, both discs being distinctly outlined with no signs of inflammation. Pupils reacted to both light and accommodation. The left pupil was somewhat slugglish and resembled the springy pupil.

Nose and throat, chest and heart all negative.

Nervous system: No Romberg or Babinsky sign. Knee jerks were slightly increased. Achilles tendon reflex normal.

Genito-urinary examination revealed large glands in groins and an old chronic gonorrhea, complicated with several strictures. Otherwise his physical examination was negative.

Laboratory examination:

Blood pressure—maximum 140, minimum 90.
Hemoglobin 80.
Red cells 4,500,000.
White cells 5,900.

* Read before the San Francisco County Medical Society, August 8, 1916.

Differential formula—Polymorphonuclear leucocytes 53.
Lymphocytes 42.
Eosinophiles 4.
Large mononuclears 1.
200 cells counted.
Wassermann negative.
Urine examination:
Specific gravity 1020.
No sugar, albumen, no casts.
Strong indican test.

Roentgen examination: Opaque meal of 500 c.c. barium sulphate buttermilk mixture. Stomach filled normally, was hook shaped, normal in size and position. Peristalsis was active, pyloric antrum sphincter and duodenal bulb were symmetrical. At the end of six hours the stomach was empty and the head of the bismuth column was in the sigmoid. Caecum was in the pelvis and apparently fixed. Appendix filled, was adherent to the posterior abdominal wall, painful on manipulation. Several plates of the gall bladder were negative for calculi. Gall bladder plates show several vertebrae with hypertrophic osteophytes on the articulating surfaces, most pronounced on the second and third lumbar.

Roentgen conclusions: Chronic appendix disease with ptosis and fixation of the caecum. Hypertrophic osteo-arthritis of the spine due to lues or some other cause.

From the history, physical examination and Roentgenological examination a diagnosis of chronic appendicitis was made. Syphilis was considered and ruled out on account of the history, negative Wassermann and absence of any physical lesions of syphilis.

Dr. Burt Stevens was asked to operate and did so on April 1, 1916. The operation revealed a few bands about the caecum, with fixation of the caecum in the pelvis just below the brim. The appendix was normal. The gall bladder was likewise normal. The lower loops of the ileum were somewhat distended and red. This condition undoubtedly accounts for the localized tenderness over the caecum. The appendix was removed and the membranous bands holding the caecum were divided. These were regarded as Jennesco's membranes. The incision was closed without anything further being done. The patient passed a very restless night and the next day was feeling very depressed, complaining of nausea, gas and abdominal pain. On April 3rd, patient complained of marked pain in the chest and developed a dry, ringing cough, accompanied with a thick, viscid sputum, tinged with blood. The temperature rose to 102 with pulse rate of 134 and respirations 40. The physical examination revealed marked congestion of both bases of the lungs.

The man remained in a very precarious state for a week. Four days after the operation the wound began to discharge a bloody, serous fluid. The next day, April 5th, the wound began to gape and discharge a great quantity of serous exudate. On April 7th, the wound was bulging wide open without any signs of infection and at no time was any real purulent material seen. The patient passed his days in the utmost agony, it being almost impossible to move his bowels with the most drastic cathartics. He complained of severe nausea and vomited on several occasions. The patient existed in this manner until the 16th of the month.

Acting on the Roentgenological findings of hypertrophic exostoses of the spine, we began a series of injections of hectine—6 centigrammes each day for ten doses. At the end of this series he received four doses of three centigrammes of enesol.

Three days following the first injection of hectine, the wound showed some signs of healing. The patient was removed to the operating room, the edges were drawn together and the incision healed in the course of one week without any further trouble.

The patient left the hospital on the first of May, one month following operation, feeling entirely well. He then received another series of hectine and enesol, receiving in all ten injections of the former and six of the latter. The patient has since returned home. He feels well, has harvested a large crop, doing hard manual labor every day.

In reviewing this case, one might say that a diagnosis of visceral crises was far-fetched, but we believe after carefully weighing all the evidence, anamnesis, laboratory findings, operative findings, etc., that we are perfectly justified in making this diagnosis. In considering this case for diagnosis, several conditions must be thought of, any one of which might have been the prime etiological factor. Cirrhosis of the liver was seriously considered. As the man was an alcoholic, an early cirrhosis of the liver may simulate the symptom complex heretofore mentioned. This was ruled out by our operative findings. The liver was found to be smooth, normal in size, the edge under the costal margin and no evidence of portal vein stasis.

Gall bladder disease was thought of from a viewpoint of the anamnesis and the man's reflex pain, causing him such terrible disturbance of the intestines, accompanied by fermentation and formation of gases, rather points to a gall bladder disease, but in the absence of any localized pain, Hartmann's defense, over this area, also the lack of corroborative Roentgenologic evidence, we ruled out this hypothesis and operation revealed a normal gall bladder.

Gastric crises the man did not have. Only once in thirteen months did vomiting occur, and that following medicine prescribed by a physician, and his pain was constantly in the lower abdomen and lumbar regions. Appendicitis, our pre-operative diagnosis, was made by the Roentgen findings mainly. The fluoroscopic examination showed the appendix fixed in the pelvis, the caecum being ptosed and definitely fixed, and the appendix on manipulation gave definite pain. These three points,—abnormal position, fixation and pressure tenderness, led to the diagnosis of appendicitis with adhesions.

As noted above, we were completely in error in this diagnosis. The surgeon gave his opinion directly after the operation, that no relief could be expected from the operation and that a careful and complete examination of all the abdominal viscera was negative. Following the bad ten days succeeding the operation, during which time things went from bad to worse, the patient getting progressively weaker, with a wide gaping wound at site of operation, we reverted to the findings of the spine and in the face of a negative Wassermann, history and absence of all physical manifestations of syphilis, we decided to give immediately a drastic course of anti-syphilitic treatment with the hope of aiding the deplorable condition of the case. The result was so striking and as the treatment led to a complete return of health symptomatically, we feel that the diagnosis of intestinal crises is the only one tenable and that it explains the symptoms presented by the case, the operative findings and agrees with our ideas concerning the pathology found in the spine by the Roentgen examination.

On looking up the literature we find a remarkable paucity of data relating to intestinal crises. For instance, the Index Medicus and the Surgeon General's report for the past ten years contains no reference to this condition. With the assistance of the staff at the Lane Medical Library, the following references were found:

Brouardel et Gilbert,—Nouveau Treaté de Medicine, Maladies de la Moelle Epiniére par Dejerine et Thomas, entitled "Crises Enteralgiques," "Coliques Intestinales des Tabetiques." They consist in very painful colics without any appreciable cause. They come on slowly and may proceed for several years, the apparition of the usual signs of tabes. Rectal tenesmus is sometimes complained of. There may be associated with it bladder symptoms.

Osler and McCrae in Modern Medicine, 1915, refer to visceral crises and speak of intestinal crises. One patient with trigeminal dissociation also suffered from frequent inexplicable diarrheas with intense abdominal pain until the proper interpretation of both was made manifest by the appearance of a series of tabetic symptoms. They refer to Charcot's work, compiled by De Bourneville, but he makes no reference to intestinal crises, only speaking of gastric and vesical and laryngeal.

Starr, in his work, 1909, speaks of intestinal and rectal crises as less common than gastric, but may be the first signs of locomotor ataxia. They are, however, usually found in the second stage. Begin by pain in the bowels and rectum, attended by watery diarrhea, great tenesmus, rapid exhaustion and great thirst. These attacks may last two or three days.

Allbutt and Rolleston, System of Medicine, 1911, says: Analogous to gastric crises and sometimes associated with them, the intestinal crises consist of paroxysmal attacks of diarrhea, with or without abdominal pain, sometimes a patient having attacks of tenesmus, pain or other disagreeable sensations in the rectum. Some pains may arise in the region of the kidney, ureter and bladder so as to arouse the suspicion of calculus. Anomalies of secretion may accompany these crises. Watery secretion of the bowel, paroxysmal fluxes of saliva, tears, sweating, even attacks of glycosuria.

In discussing the intestinal crises of syphilis, most authors mention diarrhea and rectal tenesmus. However, we found no reference to any case presenting these symptoms. Djerine says rectal tenesmus and diarrhea are sometimes complained of. He also states that these manifestations may occur years before the classical signs of tabes. Allbutt mentions lachrymation and increase of urine, both of which we met in this case. Starr notes the rarity of intestinal crises as related to gastric or visceral crises. We note in this case that the symptoms have been almost entirely of a paralytic ileus and which we believe in this case to be the result of disease of the lower neurons of the spinal cord and probably inflammatory in nature.

This case during thirteen months of observation developed no new symptoms, but a marked increase of severity of symptoms since the onset. It would appear to us that these symptoms in this case are the first indications of an oncoming tabes dorsalis. The changes in the spine, which led to our final diagnosis, have long been known to exist under the name of hypertrophic exostoses, thorns, spurs, spicules, hooks, lippings, etc.

Goldthwaite in his classification of the chronic arthritides attributes these conditions to chronic toxic processes, the etiology of which in many cases is quite obscure. We have recently found in a series of twelve consecutive cases a positive Wassermann associated with these findings. This case which we are reporting had a negative Wassermann, but is undoubtedly syphilitic, if one may judge from the response to the therapeutic means applied. We strongly suspected syphilis in this case on finding the hypertrophic lesions of the spine, but were led away in our diagnosis by the negative Wassermann, negative history and absence of all lesions of syphilis.

CONCLUSIONS.

1. If we are to judge from the amount of literterature compiled on intestinal crises, we must conclude that this symptom complex is rarely met with.
2. As Dejerine has clearly pointed out, intestinal crises may be the first symptoms of an oncoming locomotor ataxia.
3. Jennesco's membranes involving the caecum and holding it fixed in the pelvis were misleading in this case and caused a faulty interpretation to be made of the gastro-intestinal Roentgen findings.
4. This case again illustrates the frequent fallacy of the Wassermann test and that syphilis must not be excluded because the reaction is negative. The hypertrophic exostoses found on the spine in this case strongly suggested syphilis to us. Other factors that point to syphilis must always receive consideration.
5. The Roentgenologic examination must be routine in all departments of medicine as well as surgery. From it may be gained the informa-

tion instrumental in clearing the diagnosis of obscure cases.

Discussion.

Dr. L. B Crow: I would like to state that the patient has since returned to San Francisco and reports that he has gained 20 lbs. since we last saw him. He has had a few returns of the gastro-intestinal symptoms due to gas. I examined the gastro-intestinal tract externally and found that he still has localized tenderness over the caecum.

I think cases of syphilis simulating diseases of the gastro-intestinal tract are not reported in the textbooks to any extent. Cronin mentions that in the Interstate Medical Journal for 1914. Dr. Edwards of Chicago, in speaking of syphilis of the gastro-intestinal tract, says many conditions that simulate septic processes can be nothing else than a spirochaetal sepsis.

In discussing the diagnosis, it occurs to me that while I was an interne at Cook County, a man came in who had been diagnosed as appendicitis or some other abdominal complaint. I went over him carefully, and the blood count being low (7,000), with marked increase in the Achilles tendon reflex and springy pupils (while not diagnostic of tabes), the coincidence of the two factors led me to suspect a beginning locomotor ataxia. I called Dr. Julius Trinker, we went over the case carefully and he corroborated my diagnosis. The man was sent to the hospital and improved on anti-syphilitic treatment.

The literature on visceral crises is very scarce. Extensive research in this library and in Lane library gave us only four articles on intestinal crises.

Dr. Burt Stevens: I had the privilege of seeing this patient before the Roentgen examination was made, and the man was definitely an abdominal case and very confusing. For instance, his pain was in the right lower quadrant of the abdomen, while his greatest tenderness was a little to the right of the umbilicus and above it an inch or two. The history of his having been a heavy drinker, and tenderness in this location made us consider cirrhosis of the liver, and the character of the pain, gallbladder disease. It was not until the Roentgen examination was made that we any more than considered the possibility of appendicitis. There was little of interest to be found, aside from this tenderness, except that the left pupil was sluggish and slightly irregular, and his knee jerks were slightly accelerated. Consequently we considered one of the forms of syphilis, but when the Roentgen examination was made, the pathology of the lower quadrant in the appendix region caused us to agree that it was probably all due to trouble in this quarter and gonorrhea as the probable etiology in the formation of the spines. The examination of the spinal fluid was not made for the reason that the patient absolutely refused spinal puncture. Probably that examination, previous to the Roentgen examination or without it, would have been of great value.

At the time the abdomen was opened nothing striking was found in the abdominal cavity except these bands across the head of the cecum. The appendix was, to my mind, absolutely normal, although it was fixed with the head of the cecum. The ileum, just proximal to the ileocecal valve, was considerably distended, but it did not seem to me that there was obstruction enough to cause this distension, because on pressure, it readily emptied. The gall-bladder was normal. I explored his abdomen, palpated the kidneys, went over the stomach and the abdominal contents thoroughly, and all appeared to be perfectly free from any other signs of inflammation than those just noted.

Dr. J. T. Watkins: Dr. Burnham has left on my mind the impression that he regards hypertrophic arthritis of the spine as being always of luetic origin. He quoted, you will recall, twelve consecutive spines which presented hypertrophic changes and all of these patients as having been found to be Wassermann positive. I do not think Dr. Burnham wished to convey just that idea; but in any event I wish to dissent from it. I have seen a great many hypertrophic spines which could be laid to other causes, notably, the intestinal putrefactions; and while, as some one has said, it is only by God's grace that practically all men have not had syphilis, still I have known a goodly number of ancient spinsters with osteo-arthritic changes, to attribute which to such a cause, would be to couple their name with an unmerited reproach.

Dr. Hans Lisser: I was very much interested in Dr. Burnham's paper because I wonder if it does not clear up the following case. A man came to me with a letter from his physician diagnosing stone in the common duct. Subsequent examination disclosed no stone. He had had, since two months, three attacks of abdominal pain, very severe, with vomiting but without fever, mostly in the upper right quadrant, and of course the intestinal crisis mentioned by Dr. Burnham may simulate gallstone attacks as well as appendicitis. The plates showed no stones, nor did his gastro-intestinal plates show anything of significance. The Wassermann, by Dr. Oliver, was negative. There was no history, and absolutely no signs or symptoms assignable to lues, despite particularly careful examination. The abdominal condition being decidedly obscure, we fell back on chronic appendicitis. We did not do a spinal fluid in that case because there were no signs of neurological involvement. The fundi were normal.

The patient was operated on. Nothing was found in the abdomen, which was thoroughly explored, except a possibly mildly inflamed appendix, which was taken out. He was operated upon by a very careful surgeon and very skilfully sewed up with great attention to technic. Three days later he was wide open. He was operated again at once and this time silk worm gut through and through sutures were taken. Three days later he was open again. This time he was sewed up with silver wire at intervals of half an inch and he remained closed and has been well since then. No evidence of peritoneal infection was present on either occasion.

He has received no antiluetic treatment. I would like to ask of the surgeons present whether breaking down of an abdominal wound, carefully sewn up, in a strong, healthy man, can be due to other conditions than lues? It will be interesting to observe this patient. If his attacks of pain recur, a diagnosis of gastro-intestinal crises must follow, despite the absence of any history, signs or symptoms of syphilis.

Dr. G. C. Macdonald: I consider the case reported to be a typical one of so-called "intestinal crises," and if Dr. Burnham will consult Jonathan Hutchinson's last work on syphilis (the edition issued just prior to his death) he will find similar cases quoted therein.

What interested me in the report was the post-operative pulmonary inflammation, which I have observed occurring a number of times following the administration of ether, a few having terminated fatally. Chloroform, on the other hand, is less likely to bring about such a condition.

Dr. W. B. Coffey: I have a case at the present time in the hospital, referred for appendicitis. The man was in such agony that the physician who referred him told me he had been with his patient since three o'clock in the morning, and that opiates, hypodermically given, had afforded only temporary relief.

He gave the following history: Pain came on suddenly on the right side, especially painful in the right lower quadrant; with exacerbation of pain, he vomited several times.

His temperature was subnormal; pulse 60. There

was rigidity and pain over McBurney's point, with more or less tenderness and distension over the entire abdomen. The leucocyte count never went over ten thousand. Passing of renal stone was considered a cause of the crisis.

Dr. Burnham reported negative findings as far as the plates were concerned. The Wassermann was also negative.

Operation was postponed as the crisis appeared to be out of all proportion to the clinical findings. After a delay of twenty-four hours, the temperature, pulse and leucocyte count remained the same, with no abatement of the severe pain and rigidity. After several consultations and pressure from the family I operated and found a normal appendix.

After operation the pain continued with greater severity. Looking through the man's case history I found that he was a painter. Epsom salts cured the crisis.

Case history serves a very good purpose.

Dr. M. P. Burnham, closing discussion: I do not want to maintain that a hypertrophic spine is syphilitic, but it is peculiar to think that we had twelve consecutive cases that have positive Wassermanns. It is my opinion that hypertrophic exostoses of the spine have been rather overlooked as far as the etiology being syphilitic is concerned.

We arrived at our diagnosis finally on that finding. At that time we had seven or eight consecutive cases, and because 16 days following operation the man's condition was becoming progressively worse, we decided he might have syphilis and gave him this treatment. Opening of the wound without evidence of pus is exceedingly unusual.

Directly after giving hectine the wound healed up beautifully.

The Roentgen findings all pointed to chronic appendix disease with adhesions. In this case it was certainly in error, and such membranes as this appendix had probably bore no relation to his attacks.

Dr. L. B. Crow, closing discussion: Dr. Burnham, prior to the operation, maintained that the hypertrophic exostoses were due to lues, and I rather disagreed with him. As mentioned in the paper, the patient gave a history of gonorrhea, and I pointed out that these hypertrophic exostoses were probably due to this condition. With these findings (hypertrophic exostoses) by inference we have been able to make some very intricate diagnoses which otherwise might have been impossible, and in a series of this sort, one should give them at least the credit of leading to a diagnosis.

ANEURYSM.*

By CHARLES D. LOCKWOOD, M. D., Pasadena.

I have decided to present to the Surgical Society to-night the subject of Aneurysm, more especially the class of aneurysms which comes within the scope of surgical treatment. Although the individual surgeon sees but few aneurysms in the routine of his practise, nevertheless, in the aggregate the number of cases is large. When invited by the program committee to appear before you to-night, I attempted in the brief time at my disposal to review the articles appearing in the magazines which I regularly read; viz., The Journal of the American Medical Association, Gynecology and Obstetrics and the Annals of Surgery. I found reference to about 200 articles upon this subject during the past three years. Of these, I selected about fifteen representative articles, covering almost every phase of the subject, and upon these is based much of what I shall have to say to-night.

Little progress was made in the surgical treatment of aneurysm up to 1902, when Matas of New Orleans ushered in a new epoch in the treatment of certain classes of aneurysms. Like so many important discoveries in surgery and medicine, Matas' operation for aneurysms was stumbled upon almost accidentally. After failure to cure a brachial aneurysm by one of the older methods, i. e., compression, proximal and finally distal ligation, he opened the sac and found that failure of his previous ligations was due to two or three large collateral openings, through which blood reached the sac. After suturing these openings from within the sac, the tourniquet was removed and there was no bleeding. The sac was then packed and the patient recovered. This operation was in March, 1888, and although it was briefly reported, it attracted little attention. Since the publication of Matas' paper in 1903, over 200 cases have been operated upon by his method.

There are several different methods of dealing with aneurysm, the choice depending upon the size, location and nature of the aneurysm. In certain regions of the body, owing to anatomic consideration, there is no choice of operation; in others there is a wide field of choice, and success or failure will depend upon the type of operation selected. Aneurysms of the arch of the aorta are amenable to but one form of surgical treatment; viz., wiring. Abdominal aneurysms also are best treated by wiring, although Halsted's aluminum band has been successfully used and actual ligation has been performed. Matas' endo-aneurysmorrhaphy may yet be applied successfully to this type of aneurysm. Aneurysms of the smaller vessels, and especially the popliteal, may be treated successfully by a number of different methods; simple ligation, suture of the sac, excision, extirpation, arterial suture, etc. In aneurysms involving the great vessels of the neck, there is little choice; gradual compression by aluminum bands and Matas' operation may have a limited application, but in the vast majority of cases, simple ligation is the only effectual means and this is often a difficult and dangerous procedure.

The principal methods of dealing with aneurysm to-day are:

I. Ligation. This method is applicable to all aneurysms of the smaller vessels, in cases where the vessel involved is not a terminal one, nor one the ligation of which may cause extensive gangrene.

II. Extirpation. This method may be employed in much the same class of cases as ligation. It is more difficult than ligation and the mortality is higher. It should not be resorted to where ligation or some form of Matas' operation will produce results.

III. Matas' endo-aneurysmorrhaphy. There are two distinct types of operation employed, one the so-called obliterative endo-aneurysmorrhaphy, employed in those cases in which the parent artery is entirely lost at the site of the aneurysmal sac,

* Read before the Los Angeles Surgical Society, April, 1916.

and those in which the vessel is so diseased or fragile as to preclude a plastic operation. In these cases there are always two orifices separated by variable intervals and there is no visible outline of the main artery in the interior of the sac. In such cases, no attempt is made to restore the parent artery, but the blood stream is interrupted at its entrance to the sac, the sac is opened and the arterial orifices entering the sac are closed by suture. The sac is then closed by superimposed layers, sutured with catgut. It is occasionally necessary to use skin flaps to complete the closure. The second form of operation is the reconstructive, in which an effort is made to restore the parent artery. It has a very limited field and can be employed only where there is a "well defined and deep furrow or gutter leading from the inlet to the outlet of the sac. This deep groove or fissure furnishes the outline of the parent artery, which is easily restored without obliterating the main channel." No drainage should be employed in non-infected cases. The chief advantages of Matas' operation are:

1. The collateral circulation is undisturbed.
2. There is no danger of impairing the accompanying vein.
3. The artery is obliterated over the smallest possible area.

IV. Wiring. This method, indicated only in aneurysm of the thoracic and abdominal vessels which are otherwise inoperable, was devised in 1864 by Moore of London, and later modified by Corradi. It is known as the Moore-Corradi method. A fine wire made of silver copper alloy is passed into the sac through a large insulated needle or small trocar, until about ten feet have entered. A galvanic current of ten to eighty milliamperes strength is now passed through the wire for from one to two hours, when the needle is withdrawn and the wire left in the sac. Little is to be expected in the way of permanent cure, but there is nearly always marked relief from pain and there is great temporary improvement.

V. Gradual occlusion of Vessels by Bands. It has long been recognized that the collateral circulation is a most important factor in the treatment of aneurysm, and surgeons have known that many aneurysms could be cured if occlusion of the parent vessel could be brought about slowly enough for an adequate collateral circulation to develop. Prof. Halsted of Baltimore developed such a method in 1905. It has proven of great value in the treatment of certain forms of aneurysm. The method consists in partially constricting the vessels by means of aluminum bands rolled around the vessel by a specially-constructed instrument. The aluminum band should be rolled tightly enough about the vessel so that no pulsation can be felt below the occluded area. Dr. Matas has taken advantage of this method of compression by aluminum bands to test the collateral circulation in the area supplied by vessels such as the iliacs, carotids and subclavians. Removable aluminum bands are placed around the parent vessel and sufficient constriction is made to obliterate the pulse beyond the occlusion. The effect of this compression is then carefully observed over a period of time sufficiently long to determine the adequacy or insufficiency of the collateral circulation. If it becomes evident that the ischæmia is destined to produce gangrene of the affected limb, or unconsciousness in case of the carotids, the bands are loosened or removed. If the collateral blood supply seems adequate, it is then safe to proceed to radical operation in case of aneurysm affecting the extremities, or to leave the bands in place if the aneurysm affects the larger vessels not amenable to radical operation. We have here, then, a definite and safe guide in the treatment of aneurysms. It is possible by a temporary occlusion of a vesesl to determine the safety or danger of a proposed ligation. If the collateral circulation proves sufficient, the patient will be saved the dangers of the so-called "ideal operation" of Lexer, i. e., extirpation with end-to-end anastamosis, or the difficult restorative endo-aneurysmorrhaphy proposed by Matas. Simple ligation or obliteration by Matas' method will be sufficient. Should the collateral circulation prove insufficient under temporary occlusion, it is possible to develop an adequate collateral circulation by frequent sittings of compression applied to the main trunk for varying periods, together with the application of heat and massage to the affected limb. Thus what would certainly prove a futile operation, done blindly, may be converted into a safe and certain surgical procedure.

This method of estimating the efficiency of the collateral circulation together with other valuable signs proposed by Delbet, Henle, Von Frisch, Korotkow, Pachon, Tuffier, Stewart, Moskowicz, and others, has placed blood-vessel surgery on the same safe basis that kidney surgery has attained, through ureteral catheterization, radiography and functional tests. Recent statistical studies on the treatment of aneurysm have also proven of the greatest service as a guide in the treatment of these lesions. The careful study of Dr. Halsted on the "Common Iliac" gives very complete information on this vessel and the whole subject of aneurysms has been carefully reviewed by Monad and van Vert in the French Surgical Review for 1910.

Two cases of aneurysm from the wards of the Los Angeles County Hospital were presented to the Society.

Case 1. A boy about fifteen years of age, who had been accidentally shot in the femoral region of the right leg. Soon afterward, a distinct bruit and thrill was discovered over the first portion of the femoral vessels. This was supposed to be due to the buckshot imbedded in the leg, but at operation, no tumor was found, no fibrinated clot and no injury to the vessels. There was an abnormal communication between the profunda femoris artery and vein, which was congenital in origin and not the result of trauma. Ligation of this communicating vessel caused the bruit and thrill to disappear. The condition recurred, however, when the boy again became active.

Case 2. A man about 35 years of age from the Psychopathic Hospital, with a very large, pulsating aneurysm of the right femoral, the result of a stab wound, and also a very large aneurysm of the right external iliac.

UTERINE FIBROMYOMATA, THEIR CAUSATION, PREVENTION AND CONSERVATIVE TREATMENT.*

A Record of Individual Experience.

By W. A. BRIGGS, M. D., Sacramento, Cal.

Twenty-five or more years ago I attended for Dr. G. G. Tyrrell, during his illness, a woman in labor, in the fundus of whose uterus I found a fibroid three and a half or four inches in diameter, the existence of which was later verified by Dr. Tyrrell himself. The lying-in and lactation were superficially uneventful, but six months later, on examination, Dr. Tyrrell, to his surprise, and, being a surgeon as well as an obstetrician, perhaps also to his chagrin, could find no trace of the tumor whatever. It had been wholly and spontaneously absorbed. This observation remained latent in my memory until some years afterward when mammary extract was proposed, by Dr. Bell I believe, as a remedy for uterine fibroids, and the absorption of the fibroid during the lactation period at once recurred to me and afforded a basis of credibility for the proposed treatment.

In the treatment of uterine fibroids, reminiscence attaches, in my mind, to ergot as well as mammary extract. I witnessed in 1881 the gradual absorption of a large uterine fibroid, reaching or surpassing the umbilicus, under the prolonged use of ergot in liberal doses prescribed by Dr. G. L. Simmons. Gangrene loomed large in my mind as a sinister possibility, but nothing of the kind occurred, and, at the end of about a year, the woman returned to her home in Mexico in excellent health and quite relieved of her tumor.

First proposed by Hildebrandt in 1872 as a remedy for uterine fibroids, ergot had for a few years a limited vogue, but with results that demonstrated at least a moderate efficiency. Both clinical experience and laboratory experiment indicate that it stimulates contraction of uterine muscle and arterioles, and thus in a measure controls uterine circulation and nutrition, delays the growth, and indirectly promotes absorption, of adventitious tissue.

Hydrastis has, on the uterine circulation, an action clinically well established, synergistic with that of ergot. The use of these remedies therefore in conjunction with mammary extract in the treatment of uterine fibroids seems theoretically well founded and also, as illustrated by the following cases, practically justified:

Case No. 1. Miss S., 27 years of age, consulted me on account of menorrhagia in 1900. I prescribed ergot and did not see her again until May, 1901, when she was having more profuse bleeding. On examination, a symmetrical uterine fibroid was found reaching an inch above the umbilicus. A day or two later she had an enormous hemorrhage which so completely exsanguinated her that Dr. G. A. White, who was called in consultation, agreed with me that operation was hopeless. Hemorrhage was controlled by vaginal packing, ice to the abdomen, and ergot, mammary extract and hydrastis internally. Possibly because of the extreme anemia, menstruation was delayed and no further hemorrhage occurred. Hydrastis, ergot and mammary extract were continued with iron as indicated. The tumor rapidly diminished in size and within eight months disappeared entirely.

A few months later Miss S. married and has since borne two children—one now twelve and the other nine—and has remained well until the present time. In this case medical treatment saved three lives, two of which certainly, and one probably, would have been sacrificed by surgery.

Case No. 2. Mrs. H., of Covington, Ky., 44 years of age, had consulted Dr. Reamey, an eminent gynecologist of Cincinnati, who had diagnosed a uterine fibroid and advised operation; menstruation regular but somewhat profuse; intramural fibroid reaching the umbilicus. Hydrastis, ergot and mammary extract were prescribed and continued; gradual reduction of tumor and final disappearance at the end of six months. Mrs. H. remains well at this date.

Case No. 3. Mrs. M., 51 years of age, has had menorrhagia for several years; hemoglobin 58 per cent.; fibroid uterus distinctly nodular extending two inches above umbilicus; mammary extract, hydrastis and ergot. Marked improvement in menorrhagia; gradual reduction in size and final disappearance of tumor and cessation of menstruation at the end of eighteen months; remains in perfect health at present date.

Case No. 4. Mrs. B., of Covington, Ky., 26 years of age; profuse menorrhagia for several months; uterine fibroid 2 by 2½ inches; mammary extract, hydrastis and ergot; relief of menorrhagia in two months, disappearance of tumor in five months. Remains well, but has had no children since recovery.

Case No. 5. September 10, 1905. Mrs. S., of Los Angeles, 43 years of age; history of menorrhagia, pelvic distress, ill health, previous diagnosis of uterine fibroid and proposed hysterectomy; fibroid uterus, nodular—extending one inch above navel and filling lower abdomen and pelvis; hydrastis, ergot and mammary extract. September 15, 1906; tumor one inch below umbilicus; mammary extract, hydrastis and ergot continued. September 16, 1907: tumor two inches above pubes. September 20, 1908: total disappearance of tumor. November 28, 1909: no return.

Case No. 6. October 25, 1905. Mrs. H., 56 years of age; menopause at 51; no flow until October 1, 1905, when free flow set in and continued for three weeks. Uterine fibroid extending one inch above navel and involving anterior lip of cervix; declined operation; mammary extract, hydrastis and ergot. October 10, 1907, fibroid size of small orange, soft and still involving anterior lip of cervix; no flow for several months; chronic nephritis with high arterial tension. September 5, 1912, tumor gone; no return of flow; dyspnea, secondary low tension and death from cardiac decompensation a few months later.

Case No. 7. Miss J., of Los Angeles, 28 years of age; history of menorrhagia and dysmenorrhea; fibroid uterus treble normal size; mammary extract, hydrastis and ergot; rapid symptomatic recovery. Examination one year later showed uterus normal.

Case No. 8. Miss K., September 15, 1906, 26 years of age; symptomless uterine fibroid extending six inches above pubes; mammary, hydrastis and ergot extract. October 18, 1907, tumor confined to true pelvis—about two and one-half inches in diameter; discontinued treatment soon after; returned October, 1915, on account of sterility; subperitoneal fibroid two inches in diameter to left of uterus; mammary extract. February, 1916, pregnant three months; tumor not measurably changed.

Case No. 9. Miss C., November 18, 1906; age 50; profuse menorrhagia; uterine fibroid filling abdomen and extending six inches above umbili-

* Read before the Sacramento Society for Medical Improvement, September 19th, 1916.

cus; mammary extract, thyroid extract, hydrastis and ergot. Treatment continued later with omission of thyroid extract with fair regularity until April 28, 1909, when tumor reached two and one-half inches above umbilicus. Treatment continued irregularly until June, 1914, when tumor was three inches above pubes, soon after which patient died of an injury.

Case No. 10. Mrs. P., of Los Angeles, 38 years of age; fibroid tumor reaching level of umbilicus; August 1, 1910, mammary extract, hydrastis and ergot; September 6, 1911; tumor slightly smaller; February 10, 1912; tumor reduced one-half in size. August 27, 1912; tumor reduced to one-fourth of its original size—now entirely within true pelvis; October 24, 1912; tumor still further reduced in size, since which time I have not seen the patient personally. June 27, 1916, her husband reports that Mrs. P. is entirely well—has no trouble whatever referable to the pelvis.

Case No. 11. Mrs. R., Nevada City; 44 years of age; menorrhagia, pelvic distress and irritable bladder; fibroid uterus filling pelvis and reaching two inches above pubes; mammary extract, hydrastis and ergot. September 10, 1907, distinct reduction in size of tumor and relief of symptoms. March 23, 1908, uterus twice normal size; symptoms entirely relieved. September 25, 1909, uterus atrophic, prolapsed; ball pessary. November 8, 1915; remains well. Still wears pessary on account of prolapse of atrophic uterus.

Case No. 12. Mrs. C., colored. March 10, 1907, 35 years of age; menorrhagia for several months with pelvic pressure symptoms; uterine fibroid filling pelvis and reaching umbilicus; mammary extract, hydrastis and ergot. July 6, 1907; tumor two inches above pubes. April 15, 1908, uterus entirely within true pelvis; tumor practically gone. June 7, 1916, remains well.

Case No. 13. Mrs. Mc., age 47. Menorrhagia for three years, uterus fibroid, eight inches in length and three inches in breadth; hydrastis, mammary extract and ergot; relief of hermorrhage and disappearance of tumor; later uterine prolapse and repair of perineum. June 12, 1916: remains well.

Case No. 14. Mrs. Mc., August 1, 1906, age 43; menorrhagia for several years; uterine fibroid 2½ by 4 inches; mammary extract, hydrastis and ergot. June 7, 1907: unchanged; hysterectomy at patient's request; recovery.

Case No. 15. Mrs. M., May 2, 1906; 46 years of age; profuse menorrhagia; carcinoma of breast removed one year ago; uterine fibroid extending one inch above navel; mammary extract, hydrastis and ergot. June 9, 1907, uterus four inches in length and entirely within pelvis, menorrhagia relieved. September 15, 1907, tumor gone. Death a few months later from metastatic cancer of lung.

Case No. 16. Mrs. R., February 5, 1907; 44 years of age; menorrhagia for three years; fibroid uterus eight inches in length; mammary, thyroid, hydrastis and ergot extract. November 20, 1909, menstruation normal; uterus four inches in length; hyperthyroidism—thyroid discontinued. May 10, 1910, uterus atrophic, menopause; hyperthyroidism. May 16, 1916, remains well.

Case No. 17. Mrs. B., March 5, 1907; uterine fibroid three by four inches; mammary extract, hydrastis and ergot; did not report.

Case No. 18. Mrs. C., Winters, March 12, 1907; 36 years of age; uterine fibroid reaching two inches above pubes; hydrastis, ergot and mammary extract. Three months later patient became pregnant; hysterectomy in third month; recovery.

Case No. 19. Mrs. B., May 18, 1907; 41 years of age; normal menstruation; fibroid uterus filling false pelvis and reaching three inches above pubes. November 18, 1908, tumor reduced one-half; menstruation regular. September 8, 1913, tumor two by two and a half inches or less; menses regular. March 3, 1914, tumor gone; menopause. June 9, 1916, continues well; uterus atrophic.

Case No. 20. Mrs. P., Auburn, April 3, 1907; 47 years of age; uterine fibroid three by three inches; mammary extract, hydrastis and ergot. September 19, 1909; tumor one-fifth of original size. November 6, 1910, tumor gone; uterus atrophic, prolapsed; ball pessary. October, 1915, continues well.

Case No. 21. Mrs. M., May 2, 1907; uterine fibroid three by five inches; mammary extract, hydrastis and ergot. Did not report.

Case No. 22. Mrs. C., May 25, 1907; menorrhagia, neurasthenia, fibroid uterus, occupying left false pelvis chiefly and reaching within one inch of level of umbilicus; mammary extract, thyroid extract, hydrastis and ergot extract; did not report; later submitted to myomectomy and still later to hysterectomy at the hands of a San Francisco surgeon.

Case No. 23. Mrs. F., June 7, 1907; 47 years of age; menorrhagia for seven years, hemoglobin 45 per cent; nodular fibroid uterus three by five inches; no report.

Case No. 24. Mrs. B., September 1, 1907; 42 years of age; menorrhagia, neurasthenia, uterus fibroid reaching three inches above pubes; mammary, hydrastis and ergot extract. December, 1907, unrelieved; hysterectomy at patient's request; recovery.

Case No. 25. Mrs. H., August 5, 1907; 57 years of age; severe menorrhagia; fibroid uterus extending two and one-half inches above umbilicus. December 10, 1907; menorrhagia uninfluenced; declined operation; later history unknown.

Case No. 26. Mrs. —, July 25, 1908; 48 years of age; menorrhagia; intramural fibroid three or four inches in diameter; mammary extract, hydrastis and ergot intermittently until June 13, 1910, when although tumor was distinctly smaller, the menorrhagia continued; curettement, July 28, 1910; discontinued mammary extract; relief until April 23, 1914, when marked menorrhagia developed; uterine fibroid about one-half previous size; mammary extract, hydrastis and ergot with massive x-raying of pelvis. July 6th no hemorrhage for past two months, uterus normal.

Case No. 27. Mrs. W., June 1, 1909; subperitoneal fibroid filling pelvis and reaching umbilicus; mammary extract, hydrastis and ergot; treatment continued intermittently. June 2, 1913, fibroid distinctly smaller; fractional x-raying of pelvis. September 2, 1913, amenorrhoea; tumor very much smaller; no further report.

Case No. 28. Mrs. K., November 16, 1909; 40 years of age; uterine fibroid filling pelvis and extending three inches above pubes; mammary extract, hydrastis and ergot. January 14, 1910; tumor larger, impacted; declined operation. September 1, 1911, unchanged; discontinued mammary extract; fractional x-raying of pelvis. December 10, 1912, subjective improvement; tumor slightly smaller.

Case No. 29. Mrs. R., September 3, 1910; mucous colitis; menorrhagia; hyperthyroidism; uterus retroverted, fibroid; mammary extract, thyroidectin; fractional x-raying of pelvis. June 13, 1913, amenorrhoea from January to April; uterus retroverted, normal.

Case No. 30. Mrs. T., March 30, 1911; 39 years of age; extra-uterine pregnancy in 1901 with operation; pus tubes with general pelvic infection; both tubes removed with pedunculated uterine fibroid but on account of condition of patient, uterus was not removed; recovery. April 15, 1912, fibroid tumor filling both true and false pelvis; menorrhagia; mammary extract, hydrastis and ergot; fractional x-raying of pelvis. September 11, 1912, am-

enorrhoea since January 27, 1912; tumor distinctly smaller. January 16, 1914; tumor confined to true pelvis.

Case No. 31. Miss McK., July 1, 1911; 34 years of age; uterine fibroid reaching within two inches of the umbilicus, profuse menorrhagia; ergot, hydrastis and mammary extract and fractional x-raying of the pelvis for six months, which was then discontinued, and resumed for three months on February 25, 1914, without permanent improvement. Hysterectomy by Dr. Harold Brunn, recovery.

Case No. 32. Mrs. G., September 22, 1911; 43 years of age, uterus markedly nodular; fibroid reaching within two inches of the umbilicus; hyperthyroidism; mammary extract, hydrastis and ergot with thyroidectin; fractional x-raying of pelvis. January 14, 1914; tumor two and one-half inches in diameter, still somewhat nodular; suspicious abrasion of cervix. As patient was about to take a trip to Scotland, I asked her to see Dr. Howard Kelley who gave a radium treatment completing the cure. June 16, 1915; uterus normal; hyperthyroidism.

Case No. 33. Mrs. R., December 16, 1911; 50 years of age; menorrhagia; uterus nodular, four times normal size; mammary extract, hydrastis and ergot; fractional x-raying of pelvis. June 15, 1912; marked subjective improvement; uterus distinctly smaller; amenorrhoea. August 11, 1915, reported by letter that she had remained perfectly well.

Case No. 34. Mrs. B., May 20, 1912; 40 years of age; menorrhagia; uterus distinctly enlarged with subperitoneal fibroid, reaching umbilicus; mammary extract, hydrastis and ergot. February 1, 1913; fibroid two inches below umbilicus. Patient did not report further.

Case No. 35. Mrs. M., February 23, 1914; 46 years of age; uterus retroverted; two uterine fibroids, subperitoneal, one on right, two and one-half inches in diameter, on left one and half inches in diameter; cyst of round ligament; dysmenorrhoea, menorrhagia; mammary extract, hydrastis and ergot; massive x-raying of pelvis. October 2, 1914; fibroid reduced 50 per cent in size.

Case No. 36. Mrs. H., April 17, 1914; 48 years of age; chronic appendicitis; nodular fibroid uterus, profuse menorrhagia; mammary extract; massive x-raying. October 24, 1914; amenorrhoea since June 19, 1915; uterus still nodular but reduced to half its former size.

Case No. 37. Mrs. D., June 2, 1914; 41 years of age; menorrhagia; neurasthenia; uterus fibroid, three times normal size; mammary extract; massive x-raying of pelvis. November 1, 1915, amenorrhoea since August, 1915; uterus distinctly smaller.

Case No. 38. Mrs. W., April 18, 1914; 50 years of age; profuse menorrhagia; uterus fibroid, three times normal size; cervix lacerated and catarrhal; mammary extract, hydrastis and ergot; massive x-raying of pelvis. December 10, 1914; uterus of normal size; amenorrhoea since August 30, 1914.

Case No. 39. Mrs. L., January 23, 1915; 38 years of age; menorrhagia; uterus fibroid reaching two and one-half inches above pubes; hydrastis and mammary extract; massive x-raying. August 20, 1915; amenorrhoea since June 19; uterus three inches in length, tumor gone.

Case No. 40. Mrs. M., March 8, 1915; 39 years of age; menorrhagia since February, 1911; uterus fibroid, three times normal size; mammary extract, hydrastis and ergot; massive x-raying of pelvis. October 8, 1915, amenorrhoea since June, 1915, uterus normal.

Discussion of Cases: These case reports indicate the remarkable, but perhaps not invariable influence of mammary extract on uterine fibroids and menorrhagia, their most frequent and distressing symptom, an influence as illustrated in this series of cases, quite as marked in young women as in those approaching the menopause. Of the four cases under thirty years of age, three recovered rapidly and completely. Of these three cases, one has since married and borne two children and has remained well until the present—a period of fifteen years; one, although married, remains childless and the third, at last accounts unmarried, has not recently reported but she is a potential if not an actual mother, which she would not be had she submitted either to efficient surgery or to efficient radiotherapy. The fourth case under thirty, although rapidly improving, discontinued treatment before complete recovery, married at thirty and three years thereafter consulted me on account of sterility. Remains of the fibroid still persisted practically unchanged since the last previous record, eight years before. Mammary extract was prescribed and at this writing she is in the eighth month of pregnancy which promises to eventuate normally.

Of the 36 cases remaining, 4 made no report whatever; 1 improved slightly and 1 was unimproved under short treatment and disappeared; 1 under short and 1 under prolonged treatment were unimproved and elected hysterectomy; 1 became pregnant after three months' treatment and submitted to hysterectomy; 4 were greatly improved and 16 completely recovered under mammary, ergot and hydrastis extract; 7 recovered completely and 3 were greatly improved by these means, plus irradiation. Because of the urgency of the symptoms and the undetermined value of mammary extract, hydrastis and ergot were prescribed conjointly with mammary extract in the first case and, because of the seeming success of the combination, were continued in subsequent cases without change for several years.

How much ergot and hydrastis have contributed to these results it would be impossible to say. Latterly in a few cases I have omitted them for a time, but have resumed them later fancying or fearing that absorption did not proceed as rapidly under the sole influence of mammary extract. On the whole, I am quite inclined to believe that they have contributed materially to the results here reported.

Mammary extract, even with prolonged use, has not seemed to produce any untoward results. Occasionally, though rarely, the combination produced more or less gastric disturbance which subsided, however, on the suspension of hydrastis and ergot, although the mammary extract was continued. Other untoward results either from the combination or from the mammary extract alone I have not observed, even when their use was long continued. On the contrary, there was generally a distinct improvement in the physical health as well as in the morale of the patients, probably attributable chiefly if not entirely to the arrest of menorrhagia, the relief of pressure symptoms and the relief of mental strain due to fear of operation.

The mammary hormone probably antagonizes the follicular hormone or inhibits its production and thus moderates or prevents an excessive menstrual molimen and its consequent hyperemia, menorrhagia and local nutritive disturbances. The effective dosage therefore would seem to depend on the degree of excessive ovarian activity—the greater this functional activity the larger the quantity of mammary extract required to inhibit or antagonize it. A daily quantity of the extract representing from twenty to fifty grains of the fresh gland was used in the cases here reported. The dosage in several of the cases I am convinced was too small. This accounts perhaps for the comparative or even absolute failure of the treatment in a few of the cases and possibly also for the absence of gastric irritation occasionally noted by others. At present I usually prescribe thirty or forty grains daily and, in refractory cases, increase to fifty or sixty.

Contra-Indications: Pregnancy seems to be the only positive contra-indication to the use of mammary extract. In two of the cases reported, however, its continued use did not prevent pregnancy. In both of these cases mammary extract was given for some time before and for three months after conception and in a third case (in consultation) for the last four months of pregnancy without either preventing conception or interrupting pregnancy.

Causation: The facts that uterine fibroids are often either partially or wholly absorbed (a) after the menopause, (b) during lactation, (c) after removal of the ovaries, (d) after x-ray inhibition of ovarian function and (e) under the ovarian inhibitory influence of mammary extract and the further facts that uterine fibrosis rarely begins (f) before puberty or (g) after the menopause; that the uterus atrophies (h) during lactation (i) during periods of ovarian inactivity and that the uterus, ovaries, vagina, mammary glands, the entire female reproduction system (j) atrophies after the menopause, warrant the tentative inference that the development of uterine fibroids depends, in part at least, on local nutritive disturbances initiated and maintained by aberrations of ovarian function. The further fact that uterine fibroids are relatively more frequent in nulliparous women, although susceptible of a different interpretation, harmonizes quite as well with this inference. For sterility in relation to fibrosis may conceivably be a link in the chain either of causation or of sequence or of both one and the other. Contributory factors are probably chronic infections of the uterine mucosa and of the adnexa, uterine displacements and all other causes of pelvic stasis.

Prevention: Based on this inference, may we not formulate some tentative and yet rational principles of prophylaxis? And still further if the degeneration of uterine fibroids is a not infrequent cause of uterine cancer will not the prophylaxis of the former be at the same time a prophylaxis of the latter? This double prophylaxis would certainly justify the use of mammary extract in subduing excessive ovarian activity as manifested in abnormally frequent, profuse or prolonged menstruation.

Mammary extract stimulates the mammary glands and thus not only re-enforces its own action but, by continued use, probably also leaves these glands better able to perform their normal functions. This would seem to be suggested by Case No. 1, which, since the absorption of a large fibroid under an eight months' course of mammary extract, hydrastis and ergot, has borne two children and remains well at the present date—a period of nearly fifteen years. Cases 4 and 6 also lend countenance to this view as do several cases of menorrhagia of probably ovarian origin relieved for a long period if not permanently by mammary extract, but not reported here.

Whether or not, however, uterine hyperemia as shown by profuse, prolonged or too frequent menstruation be the result of excessive or perverted ovarian function, whether or not it be a factor in the development of uterine fibrosis, it certainly is a menace to the well-being of the patient and should be promptly corrected. For this purpose mammary extract, either alone or in combination with hydrastis and ergot and, in urgent cases, the X-ray, is usually sufficient.

Even if the prevention of fibrosis be impossible, its early recognition and treatment are surely a desideratum. Hence the family physician should urge with his women-patients a yearly if not more frequent pelvic examination to determine the presence or absence of this condition. Such examinations would protect the patients themselves as well as furnish data for the natural history of uterine fibrosis which as yet we possess only in the most fragmentary form.

Conservative Treatment: The frequency of dangerous complications of uterine fibroids is constantly and emphatically urged by the surgeon and generally accepted by the physician as a conclusive argument against conservative treatment of uterine fibroids. In fact no curative treatment other than surgical except by the x-ray, and that with scant and grudging courtesy, is recognized by either surgeon or physician.

The surgeon and family physician stand in quite different relation to these cases. The family physician sees or should see them early; the surgeon sees them either late or after serious complications have developed either independently or in consequence of the original fibrosis. The statistics in either case are not applicable to the other. If, as one author, and I think conservatively, estimates that 55½ per cent. of all women between the ages of 40 and 50 have uterine fibrosis, and the surgeon finds that of these cases reaching the operating room 10 per cent. are suffering with malignant degeneration, as no doubt occasionally he does, it by no means follows that uterine cancer has an incidence of more than 5½ per cent. in all women between these ages.

Adnexal disease requiring or necessitating operation, according to Mayo as quoted by Dorland, occurs in 30 per cent. of women with uterine myomata. Here again the surgeon speaks instead of the family physician. These are statistics of women in the operating room and not of women at large; statistics of women also who seek relief,

not always from uterine fibroids, but perhaps quite as often from concomitant but quite independent lesions of the adnexa, and not statistics of the whole body of women consciously or unconsciously harboring uterine fibroids. In the former case they are undoubtedly correct; in the latter they are certainly false. Notwithstanding the fact that the surgeon still regards uterine fibromyomata as his exclusive appanage, a not inconsiderable experience warrants the tentative belief that many of them lie at least in debatable territory. The stigma of statistical suspicion is insufficient to consign them dogmatically to the surgery. As surgeons can hardly claim more than 25 per cent. of cures in malignant disease of the uterus and the mortality of hysterectomy in average hands equals, if it does not exceed, the incidence of malignancy in uterine fibroids, it is difficult to appreciate the cogency of the surgeon's argument that all fibroids should be removed because of their tendency to malignant degeneration; the more so because malignant degeneration is generally a late and not an early complication of fibrosis.

The cases which may be rationally submitted to conservative treatment are (1) all of those cases in which operation is inadmissible, cases of extreme anemia (as in Case 1), of advanced cardiac or renal disease (as in Case 5), cases of severe diabetes, etc.; (2) all cases clinically free from the suspicion of malignant degeneration, of cystic or purulent degeneration, of necrobiosis, incarceration, pyosalpynx, and other serious pelvic complications.

Experience warrants us, I believe, in treating these cases vigorously with mammary extract, hydrastis and ergot, combined, in the presence of severe menorrhagia, with deep radiotherapy. Cases not responding to this treatment may still be dealt with surgically.

X-Ray Treatment.—In cases of otherwise uncomplicated uterine fibroids with menorrhagia that undermines the health, threatens the life of the patient or is refractory to mammary extract, hydrastis and ergot, radiotherapy is an effective, and, if carefully applied, probably a safe adjunct to these remedies. I began its use for this purpose in 1911 with an undeveloped technic-fractional and often-repeated doses of comparatively non-penetrating rays (7 or 8 inch spark gap) and sole-leather filter. Notwithstanding the comparative inefficiency of the method, beneficial results were evident. The technic was improved from time to time by the water-cooling tube, a lengthened spark gap, aluminum filter, massive doses and finally the Coolidge tube, the Bush control, elastic compression and the Trendelenberg position.

After forty the menopause may be established by from two to five treatments. In my opinion, it is the establishment of the menopause and not the dispersion of the tumor which is the immediate and proper object of radiotherapy—at any rate until we know more of the remote and possibly untoward effects of intensive irradiation. Remove the cause and the tumor will surely if slowly disappear under the continued influence of mammary, ergot and hydrastis extract. With the new Coolidge water-cooling tube which produces a more penetrating ray, these results will doubtless be materially improved. Judging by my own not inconsiderable experience, the complicated method of cross-firing from multiple ports of entry, as proposed by Gauss, is quite unnecessary.

The X-raying does anatomically what mammary extract does physiologically—the former destroys the secretory structure of the ovaries, is destructive, while the latter merely inhibits its excess of function, is conservative. Moreover, the X-ray, at least if not used with great care, may produce remote, as yet undetermined and undesirable by-effects. Certainly as one undesirable by-effect, the X-ray does destroy the ovary as an endocrine gland. It establishes the menopause, accompanied generally by symptoms due to suppression of the internal secretion of the ovaries which mammary extract leaves nearly or quite unaffected.

Technic.—By bimanual palpation, determine as accurately as possible the position of ovaries and tumor in relation to the anterior abdominal wall just above the pubes. Direct the rays to the ovaries on either side through a one and one-half-inch port if they can be accurately located; through a two or two-and-one-half-inch port if they cannot. From four to eight one-and-a-half-inch ports will be sufficient if the accurately located ovaries only, and from four to eight two-and-a-half-inch ports if, in addition, an intrapelvic tumor is to irradiated. The X-ray treatments should be given preferably during the premenstrual or early menstrual period, when the reproductive organs are hyperemic and at the height of their physiological activity; that is, while the uterus and its appendages are physiologically "sensitized" to the X-ray. The skin and the subjacent tissues should be exsanguinated and thus desensitized by means of compression through an elastic air bag inflated after the tube is in situ. Under these conditions, we shall obtain maximal effects on the uterus and ovaries and minimal effects on the skin, and subjacent tissues. I use a three-and-a-half m. m. aluminum filter and a ten-inch spark with a Coolidge tube. By these precautions, I have been able, in urgent cases, to administer four erythema doses through each of several ports of entry at one sitting without skin reaction. As a rule, however, to avoid the possibility of an unpleasant skin reaction, I have contented myself with a smaller dose—usually three erythema doses. These treatments should be repeated at each menstrual or premenstrual period—as nearly every four weeks as may be, but never oftener than every three weeks. In these treatments a wooden table should always be used; a metal table might short-circuit the high tension current through the patient with unpleasant if not serious consequences.

In pelvic and other deep treatments, I have used the Coolidge tube exclusively for fifteen months and find it immeasurably superior to any other tube I have ever used. By a uniform technic, it will produce rays of a uniform quality and quantity and

with the Bush control it can easily be graduated with scientific exactitude.

Advantages of Proposed Treatment.—By the plan here outlined, I am convinced that both the morbidity of uterine fibrosis and its mortality, direct, indirect and operative, can be materially reduced. Granting even that the theory of its etiology is erroneous and its prevention by the means here proposed therefore illusory, early diagnosis and prompt conservative treatment will certainly very materially reduce its mortality, (a) by permanently clearing up many cases in their incipiency as in Cases 4 and 7, or in young women in more advanced stages, as in Cases 1 and 8, or in women approaching the menopause as in Cases 11, 13, 16, etc.; (b) by the prevention of malignant and other serious degenerations and complications by the prevention and cure of the conditions which produced them; (c) by early diagnosis and appropriate treatment of such degenerations and complications.

But this is by no means all—there will be a large saving in prospective or potential motherhood. In the cases here reported, seventy-six years of potential motherhood have been saved by conservative treatment and two lives have thus far been added to the succeeding generation which would have been certainly sacrificed by either surgery or radiotherapy. If we take these two lives as the basis of future generations and this I submit, although perhaps foreign to surgical processes of cerebration, is by no means ridiculous or chimerical, we shall have a sum total of salvage, actual and prospective, greatly exceeding the original number of patients. Both of the women, one who subsequently bore two living children (Case 1) and the other now in the eighth month of pregnancy (Case 7) would be unhesitatingly submitted to hysterectomy by the modern surgeon. This salvage of potential motherhood and prospective life made possible by the plan here outlined may, in the long run, far outweigh the immediate advantages claimed erroneously I believe, by present-day surgery.

TENTATIVE CONCLUSIONS.

1. Fibromyomata of the uterus are pathological reproductions of the normal uterine tissues.

2. Their capacity for rapid development and still more rapid involution is inherited from the parent organ.

3. Their exciting cause is uterine hyperemia of ovarian origin, often abnormal in degree, frequency or duration, especially when not physiologically suspended or counteracted by pregnancy and lactation and when accentuated by congestion of infectious or mechanical origin.

4. Mammary extract is a valuable remedy in the preventive, the symptomatic and the curative treatment of uterine fibromyomata. It should be given in liberal doses re-enforced by ergot and hydrastis.

5. By preventing and dissipating uterine fibroids mammary extract effectually prevents malignant degeneration.

6. In uterine fibromyomata mammary extract is rarely rejected by the patient, does not sterilize, is free from untoward by-effects, has *per se* no mortality and, in the best and fullest sense of that word, is curative; while surgery, on the contrary, is frequently rejected by the patient, is occasionally followed by serious by-effects, generally sacrifices the reproductive function, has a distinct mortality and is curative only in the sense that death is curative of all bodily ills.

7. In all cases of uterine fibroids free from the suspicion of malignancy, the likelihood of cystic degeneration, necrosis, parasitism or other condition demanding surgical intervention, mammary extract, hydrastis and ergot should be given a thorough trial in conjunction with ovarian irradiation, if symptoms are urgent, before surgery is invoked.

8. In uncomplicated but urgent or refractory cases of uterine fibromyomata, after 38 or 40, inhibitory irradiation of the ovaries is an effective and, with proper precautions, a safe adjunct to mammary extract, ergot and hydrastis.

9. An efficient X-ray technic is a ten-inch spark gap, 3.5 m. m. aluminum filter, the Coolidge tube, the Bush control, desensitization of the skin and subjacent tissues by elastic air compression, two and a half or three erythema doses through from four to eight ports of entry in the Trendelenburg position, preferably during the premenstrual period every three or four weeks.

UPON THE MODERN TREATMENT OF BLADDER-TUMORS.*

By MARTIN KROTOSZYNER, M. D., San Francisco.

The diagnosis and treatment of neoplasms of the bladder has, of late, undergone rapid and radical changes; in fact, the scientific recognition and the rational surgical attack of vesical tumors are accomplishments of the last three decades, during which more substantial progress in that direction was made, than during the equal number of centuries preceding that period.

The first record in medical literature upon the occurrence of bladder tumors appears in the middle of the 16th century, when Lacuna [1] in 1551 wrote his monograph entitled: "Methodus cognoscendi, exstirpandique in vesicae collo carunculus." This famous pamphlet contains various noteworthy descriptions of bladder-tumors as encountered by stonecutters or accidentally found at autopsies. Likewise, in the literature of the 17th century only scant records of a few isolated cases of vesical neoplasm are found, the most noteworthy of which is the case of Covillard [2] of Lyon, to whose credit stands the performance of the first operation for removal of bladder tumor. Neither does the literature of the 18th century contain any substantial addition to the knowledge of the subject. At this period the designation "bladder-fungus" is first used by contemporary writers; Le Cat [3] and Warner [4] were the first to remove tumors of the female

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1. Quoted from Handbuch f. Urologie, 1905, Vol. ii, p. 726.
2. Obs. Chirurg. Strassbourg, 1792.
3. Obs. Chirurg. Lyon, 1720.
4. Quoted by Clado.

bladder by the urethral route; and hematuria as a prominent symptom of vesical neoplasm is for the first time in literature mentioned by Chopart.[5] The first attempt at scientific classification of new growths of the bladder appeared in the fourth decade of the 19th century, when Civiale[6] presented an exhaustive study of vesical neoplasms, which he divided in cancers and fungi, and for the removal of which he recommended the intravesical application of the sling. Civiale's inspiring work did not find the recognition it deserved; for the literature of several of the consecutive decades, merely contains records of a few isolated observations without adding any new aspect upon the subject.

The really scientific era of the diagnosis and treatment of bladder-tumors sets in only at the end of the last century, when bolder surgical procedures, like the explorative incision, as first carried out by Volkmann and Thompson, became feasible under the protection of anti- or asepsis, when, furthermore, pathological anatomy rapidly assumed its predominating influence upon medical science by the fundamental work of Rokitansky and Virchow, and when, above all, by Nitze's cystoscope the early diagnosis and clinical classification of bladder-tumors were rendered feasible.

To the French school belongs the credit of having presented us with the classical symptomatology of vesical tumors, and since the day that Dittel first was able to recognize cystoscopically a neoplasm of the unopened bladder, the way to its removal, by suprapubic cystotomy, was quickly paved by the brilliant work of Billroth, Czerny, Trendelenburg, and above all, by the genius of Guyon.

Comprehensive treatises upon the subject appeared from now on at rapid succession by Thompson, Küster, Kümmell, Guyon, and especially noteworthy are the exhaustive treatises of Albarran[7] and Clado[8]

The rational treatment of bladder-tumors hinges upon the intelligent interpretation of their pathological structure, a passing consideration of which, therefore, seems unavoidable in this connection.

Up to a short time ago bladder-tumors, according to their clinical character, were divided into benign and malignant growths, the latter possessing features of rapidly spreading over all strata of the bladder-wall, and of forming metastases. As benign forms were considered papillomas, adenomas, fibromas and myomas, while the malignant forms comprised carcinomas, sarcomas and myxomas.

From a practical aspect, pedunculated tumors were differentiated from broad-based and infiltrating growths.

The best classification, obviously, is that based upon the histological structure of neoplasms, since it permits of recognizing the nature and origin of the growth and, by these means, of most valuable conclusions upon the clinical features of a given case. According to their histological structure, vesical neoplasms are divided into epithelial and fibro-epithelial tumors (papilloma, adenoma, papillary carcinoma) connective-tissue growths (sarcoma, fibroma) and muscular-tissue tumors (myoma). Mixed forms of these tumor-species occur very frequently.

The transformation of benign papillary tumors into malignant forms was first mentioned in the literature in 1855 by Foerster.[9] Almost 40 years later in 1894, Colley[10] confirmed that view by painstaking and systematic histological investigations. The changes referred to, occur, as a rule, in the epithelial cells of the villi, at the border-line between epithelium and stroma, or at the pedicle of the growth; later on, epithelial cells may protrude in many ramifications deep into the pedicle and from there into the bladder-wall, so that in place of a papilloma a pedunculated carcinoma may ensue.

Not every papillary carcinoma is, of necessity, the outcome of a primary benign papilloma; on the contrary, primary pedunculated papillary carcinomas are met with quite frequently.

By systematic histological examination of the earlier stages of these cancerous growths it was proved, that they invariably originate from a small and circumscribed area of the bladder-epithelium, which, quite frequently is found to be the seat of definite changes, like increase in cells and irregularity of form and size of nuclei, and from which, later on, epithelial salients in form of ramified strands and dumb-bell shaped formations may protrude deeper into the bladder-wall.

These frequently met with transitional forms of bladder-tumors render the clinical diagnosis hazardous as regards prognosis and therapeutic attack. It is generally assumed, at present, that villous vesical tumors as a rule are only apparently benign, that they may harbor a malignant nucleus and that originally benign papillomas may become malignant by metaplasia. Thus it may occur, most frequently, that a truly malignant growth is diagnosed and treated like a benign neoplasm. Moreover, by these means, the histological examination of tumor-particles, either eliminated spontaneously with micturition or in the course of bladder-irrigation, or obtained by intravesical application of cystoscopic scissors or rongeur, is often frustrated as regards diagnostic reliability and shorn of its value as a therapeutic index.

I have purposely dwelt so long on the histological aspect of bladder tumors, as the uncertainty of the situation marks the keynote of our attitude in the attack of these growths. By good authority it has been advised to consider every bladder tumor a priori as malignant and treat it as such, and equally radical surgical measures have been recommended and actually carried out in the presence of insignificant and pedunculated papillomas, as against infiltrating broad-based neoplasms, possessing all the earmarks of malignancy.

There is, though, on the other hand, no chap-

5. Traité des mal. des voies urin., Paris, 1791.
6. Traité sur les mal. des voies urin., Paris, 1843.
7. Les tumeurs de la vessie, Paris, 1892.
8. Traité de tumeurs de la vessie, Paris, 1895.
9. Ill. med. Zeitung, 1855, Vol. iii.
10. Deutsch. Zeitschir. f. Chir., 1894.

ter in urinary surgery so absolutely discouraging as that dealing with the end-results of cases of so-called malignant disease of the bladder. I say designedly "so-called" as, apparent histological and cystoscopical malignancy fortunately does not always coincide with the clinical course in a given case.

In the past few years the extent of partial resection of the bladder for malignant disease of the bladder has been materially increased, and also transplantation of the ureters has become a relatively common procedure, which was carried out wherever there was a reasonable question of the ureters coming into the diseased area. In spite of these almost sweepingly radical measures I doubt whether end results have materially improved. Chute,[11] for instance, after a careful perusal of the operative end-results of 18 cases of malignant bladder growths, found only one that was without signs of recurrence at the end of three years after operation, and a similarly discouraging report was presented by Bier at the last meeting of the American Medical Association in Detroit. In order, therefore, to improve the results of early operations, a dissection of the lymphatics of the pelvis was, of late, recommended, to be included as an essential part of the operation, to be done as a routine measure much as dissection of the axilla is made in all breast cases. Thus enucleation of the regional lymph-glands, in connection with total removal of the bladder, and similar radical measures would, according to Chute, constitute the only reliable means of stamping out vesical malignancy.

In the face of the poor end results of radical surgery in bladder tumors, at the hands of most competent surgeons, the question arises: Is it under all circumstances necessary to remove bladder tumors in every instance? This question does not appear to be without justification, considering the fact, that many cases of vesical growth may exist many years, in fact several decades, without material detriment to the patient. Guyon reports observations of vesical neoplasms that existed 29 years, Albarran saw cases of 12, 14 and 30 years standing, Weir one of 37 years, Casper several cases of 20, and one of 28 years' duration, and Stein one authenticated case of 42 years' duration without distressing symptoms.[12] I am able to report a few similar observations:

Many years ago I had the opportunity, at Posner's Clinic in Berlin, to observe, cystoscopically, a typical broad-based and apparently infiltrating vesical carcinoma in a man of about 60, who was presented at various consecutive visits to the same clinic. The tumor had in all these years apparently not considerably increased in size, while the patient's general condition always seemed to be quite satisfactory.

In 1906 a man of about 70 was referred to me on account of hematuria. Cystoscopically, a papillomatous growth was noticeable, which, at that time, was diagnosed as papillary carcinoma. This case was presented to a class of students for several consecutive years, during which no particular change in the cystoscopic aspect of the tumor could be ascertained. The patient declined operation and, except for an occasional attack of hematuria, never suffered from local symptoms, and claims to enjoy at present as good health as compatible with his advanced age.

In a man of 64 a typical broadbased and infiltrating vesical carcinoma was, on account of the patient's refusal to submit to surgical interference, treated by means of fulguration, with the result, that his distressing bladder symptoms increased in intensity. Since the cessation of local treatment the patient's local and general condition, save for occasional attacks of moderate hematuria, have been entirely satisfactory for the past 15 months.

This leads to the consideration of the symptomatic, or rather conservative treatment of bladder-tumors, by which the patient may be rendered comfortable for long periods. As the local treatment essentially coincides with that of cystitis, it does not deserve to be dilated upon in this connection. More worthy of consideration, though, is the treatment of hemorrhage, in the management of which I have never seen any benefit by the application of internal medication. Hypodermic injections of gelatine or horse-serum are painful, but should be given a trial; the efficacy of these remedies, though, is variable or, to say the least, unreliable. Better results are obtained with local applications upon the bladder-wall, and I consider injections of highly concentrated nitrate of silver solutions of great value in this emergency. The bladder having been emptied of urine, it is irrigated as clean as possible, and then about 100 c.c. of a 1:1000 to 1:500 silver-solution, which is gradually increased in concentration, are injected. Injection of larger quantities at one time should be avoided, in order to prevent rapid distention of the bladder-wall. This treatment is repeated every second or third day. By these means scar-formation over the bleeding focus is effected and hematuria may thus entirely stop. I know that methylenblue-injections have been used for the same purpose, but I could never reconcile myself to the rationale of applying any remedy short of one with a locally styptic effect. Similarly disappointing were my results with adrenalin injections.

The occasional application of an indwelling catheter is, in some cases, fraught with cessation of bladder-contractions; in this way the bladder may be temporarily put to rest, and thus hemorrhage may stop for an indefinite period.

The statement is ventured that, by these and similar means, hemorrhage may be stopped in almost all cases, especially in those of benign character, though I have observed several cases of undoubtedly malignant character, in which severe attacks of hematuria were successfully managed in this manner.

Considering the poor end-results of radical operative measures, the intravesical method of electrical cauterization deserves first place in our thera-

11. J. Amer. Med. Ass'n, lxiii, p. 2266.
12. Quoted from Casper's Lehrbuch f. Urologie, 1910, p. 227.

peutic endeavors. Although the technical difficulties, connected with Nitze's intravesical sling and cautery, were considerably facilitated by improvements in the instrumentarium at the hands of various authors (Casper, Krönlein, etc.), the attack of growths situated on the anterior and superior bladder-wall was in most instances very difficult, if not almost impossible with that method. The total extinction of larger tumors required, moreover, so many sittings, that exhaustion and neurasthenia of the patient, so often observed as sequels of the treatment, prevented the continuation and successful termination of the same. For these reasons and many more Edwin Bier's[13] introduction of high-frequency cauterization of bladder-tumors marks one of the most epoch-making advances in our armamentarium against this grave malady. I do not wish to repeat statements and facts which are well known to every member of this section, and simply beg to call attention to a recent article of Howard Kelly,[14] in which he advocates the use of the dry endoscopic tube in connection with fulguration, as by these means many apparently broad-based growths might be found to be pedunculated. The cauterization of the pedicle by means of the fulgurating electrode suffices, according to that authority, in order to burn off seemingly large tumor-masses, which, later on, are eliminated from the bladder.

On the basis of my own limited experience I would not hesitate to subject every bladder tumor a priori to fulguration, until lack of success has proved the inefficacy of the treatment. Then only I would consider indicated excision of the tumor through suprapubic cystotomy, if that procedure should not appear, in all probability, to become frustrated in its results by the location of the tumor at or near the trigone, involving one or both of the ureteral openings. Personally I have not seen good results from the more radical procedures connected with transplantation of one or both ureters and would be inclined to reserve these patients, wherever indicated by the symptomatology of the case, to more conservative or rather expectant treatment, though I am convinced that Watson's operation, viz.: bilateral Nephrostomy, eventually as a sequel to total cystectomy, may in the presence of exceptionally distressing symptoms, be strictly indicated and should be then carried out, as being preferable to a miserable existence.

Discussion.

Dr. Henry Meyer: I have had quite a large experience in removing bladder tumors with the operating cystoscope. We know from the reports of Nitze, Casper, and other men, that the end results after removing papillomata with the operating cystoscope have been flattering, compared with surgical procedures.

In regard to whether or not we should remove all tumors from the bladder: Papillomatous tumors exist in many people for years and produce no discomfort, except an occasional hemorrhage. Dr. Krotoszyner mentioned a case I saw with him some years ago; a very old man with a large pedunculated papilloma, whose only symptom was occasional bleeding. That man is very comfortable and undoubtedly he will live until the end of his days comfortably, showing that these tumors do not always become malignant.

In the treatment of hemorrhage resulting from papillomata, 1 to 4000 adrenalin solution, or 10% antipyrin solution, allowed to remain in the bladder, will stop most cases of hemorrhage.

In the case Dr. Krotoszyner mentioned—where the patient had a large section of bladder removed—I examined him some time ago and told some of his family that he had carcinoma. The growth did not look like an ordinary pedunculated affair; on the contrary, there was a broad base and very angry appearance.

In regard to the use of the operating cystoscope, I agree with Dr. Krotoszyner when he states that it can never be a universal operation because of the skill required; however, the necessary skill can be acquired and the results are certainly good. We cannot lay aside the wonderful results reported by the men I have referred to.

I have operated 36 or 37 cases of papilloma with the operating cystoscope and have seen three recurrences. I have had no trouble in getting the patients to come for their sittings. I have never used anesthesias, local or otherwise, and the patients walk out of the office. It is very important, after removing these growths, that the surface from which they sprung should be thoroughly cauterized.

It would seem that the high frequency method of treating tumors (although I have had no experience with it) offers a great advantage inasmuch as it can be performed by anyone accustomed to the use of the cystoscope. More patients could be benefited than by the use of the operating cystoscope if the results are as good, although I do not know that the end results are as good. It will take some time to determine this point.

Dr. L. C. Jacobs: When these cases with hematuria come into the urologist's hands, they should be cystoscoped. The points of hemorrhage can be frequently controlled by the application of the fulgurating electrode. I believe the ideal method is the fulguration method; it is simple, requires no great skill, is not severe upon the patient (inasmuch as the pain associated with it is negligible), and with this method you can keep the patient under control. The fulguration method necessitates frequent treatments at intervals of about a week and gives one an opportunity to observe the character of the tumors. After treating one of these affairs three or four times, and no improvement seems to occur, we are safe in stating that it is malignant and demands operative procedure.

Dr. W. P. Willard: In talking with a number of men who have worked with the fulguration method, many of them look at it with some disfavor because in many malignant cases the growth is accentuated by the application of the high frequency current. With that idea in view, Young is using radium applications for tumors in the bladder. By means of a cystoscope carrying a cartridge at the end, radium is applied directly to the tumor. By means of a lance mechanism the radium can be placed either on the anterior superior wall, or close into the internal sphincter. I want to bring out especially the fact that the high frequency current is apt to increase the growth rather than relieve the condition.

Dr. Martin Molony: Dr. Henry Meyer states that he considers the Nitze method of treating papilloma of the bladder by galvanic cautery a valuable one.

Most authorities, especially in the east where

13. J. Amer. Med. Ass'n, May, 1910, and Centralbl. f. Chir., 1913, No. 34.

14. J. Amer. Med. Ass'n, March 4, 1916.

fulguration with high frequency current was first developed in the treatment of vesical papilloma, hold that this latter method is far superior to any other.

Keyes and Geraghty, who have large experience, positively state that fulguration should be the treatment selected for papilloma, both benign and malignant, in which there is no infiltration.

Pedunculated papilloma can be snared off and the base treated by fulguration. The action of the D'Arsonval current is somewhat like radium and penetrates deeply into the diseased tissues.

As a typical example of the results obtained by this method quite recently, I snared off a moderately sized papilloma with a well-defined pedicle shaped like a mushroom. The patient, who was 76 years old, had a history of severe hemorrhage about thirty years ago with similar recurrences for two or three months before I saw him. In this interval there were many attacks of cystitis and his general health was poor.

The growth was snared off and the base well sparked with the D'Arsonval current on two occasions. Cystoscopy, four months later, showed no trace of the growth. The mucous membrane was quite smooth and showed no indication of any scar except that the orifice of the ureter, to which the growth was in close proximity, was somewhat distorted. There was no impairment of the orifice as a No. 8 catheter was passed easily. The patient's health improved and his weight increased 36 pounds in four months.

The immediate result in this case is typical of a number of similar cases reported and far excels any radical operative procedures.

Dr. Henry Meyer: Dr. Molony misunderstood me when he remarked that I said that the operating cystoscope was more valuable than the fulguration method. I said I only knew the good end results from the use of the operating cystoscope. We should make a comparison of the end results with the use of the operating cystoscope and with other methods, such as high frequency. I would like to hear if Dr. Krotoszyner has any statistics bearing on the end results from the treatment of papillomata with fulguration.

Dr. Krotoszyner, closing discussion: I cannot answer Dr. Meyer's question as to the end-results of my work with fulguration, since I have not used that method long and extensively enough as to permit me to draw satisfactory conclusions. Statistics in that direction, as recorded in the literature, seem to be very favorable, according to which much better temporary and permanent results are obtained with fulguration than those contained in the last extensive report upon Nitze's method, which was published some years ago by Weinrich. The greatest drawback to Nitze's method, to my mind, is its difficult technic, which was always a drawback to its popularity, notwithstanding the fact that in Dr. Meyer's skilful hands this work has yielded such excellent results as he has reported.

Fulguration with the D'Arsonval current is certainly preferable to the Oudin method, as cauterization and total destruction of the pedicle is materially facilitated by these means.

I have not mentioned in my paper anything concerning radium treatment, as that method does not seem to be ripe for discussion at this time.

While excellent operative results may sometimes be obtained, even in advanced cases, at the hands of skilful surgeons, the question, nevertheless, arises whether such patients might not have remained comfortable without surgical treatment, and at present the consensus of opinion seems to gravitate towards a more expectant treatment of bladder tumors, unless distressing symptoms render severe operative procedures unavoidable.

TUMORS OF THE KIDNEY.*

By STANLEY STILLMAN, M. D., San Francisco.

When I was asked by the Chairman of the Urological Section to contribute a paper on Tumors of the Kidney at this Symposium, based as much as possible on personal experience, I cheerfully accepted the invitation, honestly believing that I had seen a considerable number of cases; but as has been often the case with myself and perhaps with some others too, when it came to facts, I could find in my personal records of 25 years only 7 cases of renal tumors, excluding pyo- and hydronephrosis and polycystic kidney, and of my immediate associates one has seen 3 cases, another 2, and another 1; so that in our experience tumors of the kidney are much more infrequent than we thought. In 1885, S. W. Gross collected all the reported cases that had been operated upon up to that time and the number was only 47, of which 33 were diagnosed sarcoma and 14 carcinoma. Lotheissen reported in the Archiv fur Klinische Chirurgie, in 1896, 9 cases, 5 of sarcoma and 4 of carcinoma, and A. B. Johnson reporting all the cases of kidney operations at the Roosevelt Hospital in New York from June 1st, 1890, to October 1st, 1898, gives 6 cases of tumor, 3 or carcinoma, 2 of sarcoma and 1 of "myo-chondra-adeno-carcinoma probably originating in a supra-renal rest." As Grawitz did not publish his observations until 1883 in Virchow's Archiv on the close resemblance between the cells of most kidney tumors and those of the supra-renal capsule, his belief that these tumors originated in aberrant supra-renal rests in the kidney was not generally accepted for many years. The term hypernephroma was suggested by Lubarsch in 1894 for these so called Grawitz tumors and neither term appears in any of these records. Recently the term Mesothelioma is being used. It is the most common form of kidney tumor and is most interesting and important from the fact of its relative frequency, its histology and because of its malignancy, particularly as regards metastasis.

J. D. Barney, of Boston, in 1913 succeeded in getting together 74 cases of proved kidney tumor from the records of the Massachusetts General Hospital of the previous 30 years. R. H. J. Swan of London based a lecture on kidney tumors, published in the Lancet in 1913, on an experience of 10 cases of his own in the Brompton Cancer Hospital and 2 of his colleagues. Of the 74 cases occurring in Massachusetts General Hospital 27 were hypernephromata, 7 sarcomata, 7 carcinomata, 3 adenomata and 1 endothelioma; the remaining 24 had not been subjected to microscopical examination. Of course, many of these would have been classified now as hypernephromata. Swan gives the percentage of hypernephromata as 75-80% of kidney tumors. Eusterman, in 1911, reported 56 cases of renal tumors operated on at the Mayo Clinic in the previous 10 years; of these 36 or 71% were hypernephromata, 7 were car-

*Read before the annual meeting of the California State Medical Society, Fresno, Cal., April 20th, 1916.

cinomata (2 secondary to stone) and 4 sarcomata. Of my own cases 3 were hypernephromata, 1 adeno-carcinoma, 1 carcinoma secondary to stone and 2 sarcomata in infants. As a matter of fact, all the statistics previous to the last 10 or 15 years on the relative frequency of the various malignant tumors of the kidney are practically worthless, as up to 1883 all the hypernephromata were classified as either adenoma, carcinoma or sarcoma, and for many years later many were, and at the present time perhaps some still are. Garceau's monograph on Tumors of the Kidney, published in 1909, contains the most satisfactory classification we have to-day. *Clinically* any tumor of the kidney that gives rise to *symptoms* had better be regarded as malignant and treated accordingly. While there are benign tumors of the kidney, they are quite rare and are usually found by accident or at autopsy and they are never clinically apparent unless they attain a large size which they very rarely do, or lose their benignity, which they are apt to do particularly the adenoma.

The diagnosis of renal tumor is not always easy. In my own cases the diagnosis was made in five before operation, but the diagnosis of tumor was also made in a good many more that were *not* tumors of the kidney. In one case that was not diagnosed the patient was an infant about 18 months old and while at first a diagnosis of sarcoma of the kidney was made, it was changed to probable tuberculosis peritonitis of the fibrinoplastic type. The belly was greatly distended and there was a large immovable tumor mass on the left side but it had a thin edge anteriorly and there was some ascites. When the child was relaxed another mass could be felt in the right iliac fossa. There was an area of resonance behind the tumor and several areas of resonance between it and the abdominal wall. All of these abnormalities were due to the fact that a large sarcoma of the kidney had invaded the peritoneal cavity by separating the layers of the mesentery of the small bowel in two places, pushing aside the vessels, and one of the processes of the growth had extended across the abdomen to the right iliac fossa. It had also penetrated the inner layer of the meso-colon and had crowded part of the colon back toward the loin. It looked like a desperate thing to undertake but was successfully removed without ligating any of the mesenteric vessels, but leaving several large rents in the mesentery of the small bowel and colon. The infant died five weeks later of septicaemia following an otitis media. No metastases were found at autopsy. With the exception of this case and the one of carcinoma secondary to stone, the others all had a more or less freely movable tumor which was rounded wherever it could be felt; no thin edge as in the above case and as is present in enlargements of the spleen or liver. The tumor is by no means always easy to detect and Swan recommends that both the knee-chest position and Israel's method be employed in doubtful cases. The latter consists in placing the patient on the sound side with the thighs well flexed and palpating the kidney by bimanual pressure. It is evident that the detection of a tumor depends on the size and location of it. A fairly large tumor of the upper pole may escape palpation though it may push the kidney down far enough for the normal part of it to be felt. In infants the tumor is usually overlooked by the parents till it is of huge size,—the child being regarded as pot-bellied. This was the case in both of our cases of sarcoma. While, of course, tumor is one of the diagnostic triad, it is necessarily absent in the early stages, and if the other two symptoms of pain and haematuria cannot be explained after careful physical examination including cystoscopy, ureteral catheterization and X-ray plates, its absence should not counterindicate an exploratory operation, any more than the absence of tumor in suspected cancer of the stomach should counterindicate operation. In all of our cases except the two sarcomata in children, *haematuria* was the initial symptom that impelled the patients to seek medical attention. It was of an intermittent type in the three cases of hypernephroma,—many months intervening in one case between hemorrhages. The hemorrhage was generally quite profuse, independent of particular exertion, and in all three cases blood casts of the ureter could be seen. The two cases of sarcoma did not have haematuria,—they rarely do. According to F. McG. Loughnane (Br. Journal of Surgery, July, 1914) in 72% of 35 cases of renal sarcomata in infancy collected by him, the urine was negative; in 28 it contained either blood or albumen.

The case of adeno-carcinoma had intermittent hemorrhages but no blood casts of the ureter, and the bleeding was not so profuse as in the hypernephromata. The case of carcinoma secondary to stone had blood constantly in the urine while under observation but not enough to form clots. Of the 74 cases of kidney tumors collected by Barney, in 39 haematuria was noticed by the patient as the initial symptom. It occurred alone in 18 cases. Pain alone occurred in 25 and tumor alone in 15. In combination with tumor alone haematuria occurred 3 times, with pain alone 15 times, and with pain and tumor 16 times. According to Loughnane haematuria occurs in 90% of renal tumors in adults and in 72% is the initial symptom.

Pain was a marked symptom in only one case and was of a steady, dull dragging character, and was experienced for some months before the initial hemorrhage occurred. Two of the patients in whom blood casts of the ureter occurred had sharp pain at times with nausea, which was probably due to the passage of clots down the ureter. They did not complain of pain except during the attacks of hemorrhage. The case of carcinoma secondary to stone experienced no more pain than a stone filling all of the calices would account for. The diagnosis was not made in this case previous to operation. The kidney was not palpable and was enlarged at the upper pole only. The X-ray showed the stone but not the carcinoma, which

was not large but which had extensively invaded the surrounding tissues.

Thus the symptoms in all these cases conform to those generally given in the diagnosis of renal tumors, except that pain was less frequent and severe than one would expect.

In a case of hypernephroma related to me by Dr. I. W. Thorne pain was very pronounced and preceded the discovery of the tumor by some months. It was particularly severe at night, and this is a point of diagnostic importance, as the pain may and often does come on during sleep, differing in this from the pain caused by renal calculus. The pain in this case was believed to be due to a large irreducible hernia on the same side. There was never any haematuria in this case and the tumor increased rapidly in size after it was once discovered. At operation it was found that the renal vein, and probably the vena cava, was filled with growth, for shortly after the nephrectomy the lower limbs became greatly oedematous. Death occurred in seven months, and at autopsy the pelvis and abdomen were filled with metastases. Dr. Rixford reported to me that the case of hypernephroma operated on by him was still alive and well after 18 years. The tumor was a large one—nine inches in diameter, with much adventitious blood supply from the mesentery of the colon and abdominal wall, was noticed five months previously by the patient, who also had observed blood and "long red worm-like strings in the urine a month before the tumor was felt. Pain was also a marked feature of her case.

Now a word as to the mistakes in diagnosis. On the whole I think it is easier to diagnose tumor of the kidney than it is to exclude it. The principal cause of error is in thinking of tumor at all. One usually thinks of kidney tumor as a probability, whenever confronted with a mass in the loin, instead of as a rather rare possibility only. Hydro- and pyo-nephrosis can be and have been by us mistaken for kidney tumors. Cancer of the splenic and hepatic flexure of the colon and of the ascending colon have been considered as probable tumor of the kidney. A large carcinoma of the liver projecting from the concave surface of the right lobe and secondary to a carcinoma of the stomach, which itself had given no symptoms, occurring in a healthy looking woman of 30, was the cause of another mistake in diagnosis. A pedunculated fibroid of the uterus, which had become adherent to the omentum and finally received its blood supply entirely from it, lost its attachment to and for the uterus and formed an attachment to and for the parietes on the right side external to the ascending colon, which was possessed of an unusually free mesentery. This led to a diagnosis of tumor of the lower pole of the kidney because the colon passed to the inner side of a tumor apparently connected with the kidney. The adherent omentum changed the shape and to some extent the consistency of the tumor. Another mistake was made, not by me but by one of my associates, in mistaking an hypertrophied right kidney that was giving rise to haematuria for tumor. A piece excised for microscopical examination showed only arterio-sclerosis. I will not burden you with reminiscences of all our mistakes, but most of them have been due to a failure to remember certain things, and some of them to the fact that they were made before the days of cystoscopy, ureteral catherization and Roentgenography. At the present time I try to remember that tumors of the kidney are not common,—that they are not necessarily painful except when bleeding, that they are not tender—or very moderately so—, that they are not accompanied with fever, that they do not raise blood pressure, that they do not have sharp edges and that they do not occasion blood or mucus in the stools or occasion partial obstruction of the bowels unless huge.

It may be well to remember that Bland Sutton says regarding sarcoma, that they occur during the first five years of life and again between 30 and 50 years of age, but that only sporadic cases occur between childhood and 30 years. In childhood it must also be remembered that according to Loughnane, "the paucity of early symptoms offers an insuperable barrier to early diagnosis," and that "a painless and progressive swelling of the abdomen is the cardinal symptom of renal sarcoma." In distinction to the adult, however, slight fever, 99-101, was the rule in these cases. Cystoscopy and ureteral catherization cannot be carried out in the very young but examination under general anaestesia is of great importance and should be resorted to more frequently than it is.

As to the prognosis; of the seven cases which form the basis of this paper one is living after two months. This was a case of adeno-carcinoma involving the lesser pole only and without metastases so far as could be determined. It was still confined within the capsule of the kidney but had invaded and projected into the pelvis. The prognosis is better in this case than if it were a sarcoma or hypernephroma. Of the hypernephromata one lived two years and eight months and had recurrence in the bladder. There was a recurrence of haematuria about 16 months after operation and the cystoscope showed many growths on the bladder wall. Garceau reports only one case of metastasis in the bladder in 176 cases of hypernephroma. The immediate cause of death was apoplexy. Another had metastasis in both lungs and died in six months. The third died eight months after operation. The patient went home to the country and had hemorrhages from the lungs before death, which was ascribed to tuberculosis. There was no autopsy. None of the patients died of the immediate effects of the operation itself, though the case of carcinoma secondary to stone lived only three weeks.

Of the two cases of sarcoma in children one lived five weeks, and the other two and one-half months.

None of the cases showed any evidence of metastases at the time of operation. It must not be forgotten that metastases are sometimes the first

evidence of the trouble, and that in hypernephromata metastasis is very often in the bones.

The prognosis is notoriously bad in malignant tumors of the kidney, and the most distressing feature of it is that it bears little relation to the size and duration of the growth. A very small hypernephroma may invade the vessels and metastasize very early as has been emphasized by Scudder (Annals of Surgery, 1906), and a very large one may not metastasize at all, as in Dr. Rixford's case. Recurrence is said to take place in 80% of the cases, and in over 70% of these within the first year.

Recurrence is rare after five years but has occurred as late as 10 years. Swan reports two out of eight cases free from recurrence; one at two years, and one at one year and eight months. Of the 47 cases reported by Gross, two were alive and well three years after operation. Of Lotheisen's nine cases, two of adenocarcinoma were alive, one at two years and eight months, and the other at 13 months after operation. Of the six reported by Johnson none lived more than three months. Scudder, in 1906, reporting end results in 12 cases of hypernephroma stated that all but one, a recent case, had died of metastasis.

On the other hand, Wagner finds records of 34 cases which remained well from two to 18 years, of which 21 had passed the three year limit. Loughnane records 12 cases of nephrectomy in infants, of which four were surviving after three years and three after 10 years. He states that the operative mortality has fallen from 76% in 1885 to 22% in 1902 and to 7.7% in his series

Personally, I feel that if careful physical examination, including X-ray plates of bones if necessary, fails to disclose any evidence of metastases, nephrectomy should be undertaken. The operative mortality at the present time, even in infants, is not sufficient to counter-indicate it, and while the prospect of ultimate recovery is not encouraging, neither is it in cancer of the stomach nor in malignant tumors elsewhere. Of course, early operation is the desideratum, but perhaps more than in the case of any other organ the possibility of early diagnosis is limited. Still progress is being made, and I feel sure that other frequent exploration of the kidney by operation should be done, and is indicated for persistent pain, even if it is not severe, in the kidney region that cannot be satisfactorily explained, even in the absence of haematuria or tumor.

So far as the operative technic is concerned, the tumor may be attacked through the abdominal incision or a lumbar incision, or by a combination of both. The abdominal incision was used by us in the two cases of large sarcoma in infants and was Langenbuch's incision except that it went through the rectus muscle instead of the linea semilunaris. The peritoneum covering the tumor was incised externally to the colon and the enucleation, clamping of the pedicle and delivery of the tumor, accomplished as rapidly as possible. The vessels were then separately tied and the abdomen closed without drainage. In adults the incision we used was in every case a lumbar incision beginning at the 12th rib, passing the border of the erector spinae muscle to the crest of the ilium and then parallel to this and half an inch above it as far as necessary across the abdomen, practically Koenig's incision. If more room was needed above, part of the 12th rib was excised sub-periosteally, the rest removed with Rongeur forceps. In all but the carcinoma secondary to stone the tumor could be delivered sufficiently to reach the pedicle from behind and in no case was a clamp applied to the pedicle—the vessels were carefully isolated and the effort made to ligate them, particularly the veins, as far as possible from the tumor, without detaching any tumor that might have invaded them. As much as possible of the perirenal fat was removed and the wound sometimes drained, sometimes not. Morris strongly advocates a combined abdominal and lumbar incision. The abdominal incision permits more thorough inspection of the renal vessels and the neighboring structures as well as the opposite kidney. The lumbar incision permits of enucleation of the tumor without putting a strain on the vessels as it is crowded toward the spine and not away from it. The vessels are secured from in front with less risk of injury he claims, than if either incision is used alone—and the tumor more easily delivered with the assistance afforded by a hand in the posterior wound.

TREATMENT OF DRUG AND ALCOHOLIC ADDICTIONS.*

By A. C. MATTHEWS, M. D., Napa State Hospital.

That the subject of the care and treatment of the unfortunate alcoholic and drug habitue has been a neglected as well as puzzling one, I think every one who is somewhat familiar with the facts will admit. The delay in taking action with a view of doing something for these individuals is due to many factors difficult of solution. The problems are sociologic, moral, and medical, and many failures have resulted because sociologic problems have been dealt with medically or medical problems dealt with morally. Years ago, the addiction was almost universally regarded as a mere moral perversion—a bad habit entered into and continued because of moral degeneracy. The real factors contributing to the addiction are almost too many to enumerate, but we all know that alcoholism and morphinism are frequently associated with feeblemindedness, pauperism, the insanities, degeneracy, the strain, worry or monotony of existence, the overworked and lack of proper educational development. At times, physical disorders are contributing factors.

An effort was made in the California Legislature of 1911 to do something for this unfortunate class. The Intemperance Enactment became a law under constitutional provisions without the Governor's approval. This law was

* Essentials of a paper read before the meeting of Superintendents of State Hospitals and other State Officials at Napa State Hospital, September 20, 1916.

amended by the Legislature in 1915 so as to provide that, before a person shall be committed, satisfactory evidence shall be submitted to the trial judge showing that the person to be committed is not of bad repute or bad character apart from his or her habit for which the commitment is made: and that there is reasonable ground for believing that the person committed will be permanently benefited by treatment, etc. It is my experience that many of the cases of addiction sent to us are absolutely hopeless from the beginning. If they have not been addicted to the excessive use of liquor or drugs for years past, resulting in a certain degree of feeble-mindedness and weakened will-power, the cases are too often associated with criminal tendencies, degeneracy and prostitution. Of course, the superior judges are familiar with the law as amended in 1915 regarding the character of the cases to be committed and the hope of permanently benefiting them by treatment, but the incurables continue to come to us. Inasmuch as we usually obtain the true facts about their character after they come to the hospital, it is very likely that the superior judges have been misinformed regarding the character of the cases about to be committed. In the cases of prostitution among the women admitted, we find the occupation given as clerks, waitresses, stenographers, etc.

THE INCURABLE AND HIS CARE.

To cure a disease, the cause must be ascertained and removed. Where the cause is known and can not be removed, what have we to hope for? What can we expect in the way of cure or assistance from hospital treatment with the "rounders" who are constantly returned to us; those who, though they may make pledges, have no idea of carrying them out; those who, after having recovered from the immediate effects of drugs or liquors, declare, as has occurred in this hospital, that they will "get drunk" as soon as released; those who show deterioration, feeble-mindedness, degeneracy, criminal tendencies and desire for the red-light district. These are the cases that are returned to us again and again at an enormous expense to the state, and with little, if any, hope of reward for our labor with them. They are a menace to society, and the sooner they are confined in some colony or other suitable place and made to work for their maintenance, the better and safer will it be for the community. Dr. Reid, of San Francisco, has estimated the cost of commitment, transportation charges and cost of maintenance for one of these cases:

Cost of examination by Lunacy Commission	$10.00
Cost of transportation to State Hospital (average estimated by former deputy sheriff of San Francisco)	15.00
Maintenance at $15.00 per month for four months (estimated average length of detention)	60.00
Total	$85.00

This is aside from the cost to the state in the work of the medical staffs of the hospitals, and when we consider that these cases cause as much or more trouble than the insane, it means a heavy tax upon the physician's time. It is my experience that if a case, say of alcoholism, is committed a second time, he will sooner or later return a third, fourth, or more times. When a case has been committed to a state hospital once, has received careful treatment and remains for a reasonable length of time, say four months, I do not see what one can hope for in the way of benefiting that individual by a second, third, or fourth commitment. In such cases there is something fundamentally wrong with the individual, and, in most cases, it is incurable. I think that few cases deserve second consideration.

One must finish with the chronic and hopeless alcoholic or drug addict promptly and conclusively. It is important for a case of this kind to learn that at a certain point society will have had enough of him. Fathers and mothers must break with alcoholic children; wives and husbands must be freed from alcoholic mates; charitable institutions must be rid of alcoholic derelicts; society, itself, must be rid of this waste material after it has ascertained that the cases are hopeless, and have provided comfortable sequestration for them with employment. It seems to me that this great problem can be solved most readily by providing, as some states have done, a farm colony with diversified industries where they can be made to work for their maintenance under proper supervision. From such a colony the more favorable cases could be paroled from time to time, provided arrangements were made for a rigid after-care supervision.

THE ALCOHOLIC AND DRUG ADDICT WHO CAN BE SAVED.

Now, let us turn to the vast army of people who are worth while, but who, nevertheless, have, through mistakes common to our society, become victims to the habit. To be a subject worthy of our attention and careful treatment, he should conform to the following:

1. He must be an occasional or accidental drunkard, not an habitual drunkard for years past.

2. He must be a man who realizes his abnormal mental state while drinking, and wants to reform.

3. He must be a person who assumes without subterfuge or hesitancy full responsibility for his intemperate acts.

4. As a rule, he must have achieved something up to the point where he has become addicted to the excessive use of liquor or drugs.

5. He must realize that he can only build up a strong will-power by daily self-denial, never by giving away to every impulse that may come to him.

6. He must co-operate with his physician and be appreciative of the efforts made in his behalf.

7. He must decide for once and all times to absolutely refuse to take a drop of liquor or a "shot" of morphine; if he does, as a rule, he is doomed.

It has been estimated by competent observers that about twenty to twenty-five per cent. of alcoholics of all classes, and a larger percentage of

drug cases, can be reformed. When a case of this kind is committed for treatment, what shall we do for him?

TREATMENT.

The recognized lines of treatment for such cases are essentially three:

1. The gradual withdrawal method.
2. The hyoscin method.
3. The Towns-Lambert method.

The gradual withdrawal method. If we were to adopt as our standard of treatment that method which has the greatest following, we would unhesitatingly accept this method, particularly for the drug cases, for I find that most of the private institutions of the country adhere to this system. It is true that I have seen some cases of drug addiction suffer very little by this method, but, as a rule, they were cases which had been without the drug for some days previous to admission to the hospital, or had been using it but a short time and in small doses. But the average case of chronic drug addiction who has been using from 5 to 20 grains of morphine, or other drugs proportionately, daily will suffer immensely by the gradual withdrawal method, provided his mind is sufficiently clear to recognize his symptoms. Likewise, the alcoholic rarely requires any liquor, when the treatment soon to be described is instituted, unless he is greatly debilitated or is on the verge of delirium tremens. After personally comparing this method, which is slow and attended with such agony, particularly in the drug cases, with the Towns-Lambert treatment, I have entirely discarded it.

The hyoscin treatment. This method is little used. It has few adherents. Its disciple on the Pacific Coast is Dr. Bering of San Francisco. I am probably incompetent to judge of its merits from lack of experience with it. In 1902, Dr. Lott, of Cameron, Texas, published an article in the "Therapeutic Gazette," in which he advocated the hyoscin-hydrobromate treatment. It received some consideration at the time from the profession from the fact that it was endorsed by Dr. Hobart A. Hare of Philadelphia, and it is still recommended by him in the last edition of his therapeutics. It possesses, to my mind, no advantage over the Lambert treatment, and many disadvantages. The method is essentially as follows: There are three periods:

1. One week of elimination by diaphoretics, diuretics and cathartics. During this time the subject is given the drug with an attempt at reducing the amount.

2. The patient is rendered immune to pain by becoming mentally unbalanced from a dose of hyoscin: then withdraw morphine and all drugs completely; keep the patient in this condition for nearly two days. Dr. Bering says: "Secure the mild physiological action of hyoscin, indicated by redness of the face, dryness of the throat, dilatation of the pupils, and mild hallucinations." Again he says: "During this second period the patient is restless; tries to get out of bed and move about; talks at random; has many delusions and illusions." With cocaine patients he says: "It is at times necessary to restrain them"; and again to quote, "It is important that a competent nurse attend the patient constantly during the administration of hyoscin."

3. The period of convalescence. This depends upon the patient's recuperative powers, and will extend over a period of three to five weeks, thus requiring a total of from six to eight weeks in a sanitarium.

THE TOWNS-LAMBERT TREATMENT.

History. This treatment should preferably be called Towns' and not Lambert, though Mr. Towns is not an M. D.; but the so-called specific was obtained from him and given to the medical profession through Dr. Alexander Lambert in an article appearing in the journal of the "A. M. A.," Sept. 25, 1909. Some narrow-minded physicians opposed the treatment because Mr. Towns is not a physician. Such should remember that cinchona was given to the world by a layman; hydrotherapy by an ignorant peasant; "how to cut for stone," by a friar; "how to treat gout," from a soldier; "how to keep off scurvy," from a sailor; "how to sound the eustachian-tube," from a postmaster; "how to catch the itch insect," from an old market woman; we borrowed acupuncture from a Japanese heathen, and the use of lobelia from the American savage. If the treatment is undeniably successful, its parentage is of no consequence whatsoever. Mr. Towns probably knows more about drug addiction, its history, prevalence, and treatment than any other living being. He has been the spokesman in state and federal legislation upon this subject, and has traveled extensively in the Orient and Europe, studying the whole question. He was recognized by Taft when he was President, who sent him cases for treatment under the government officials' supervision, and he represented the National Government at the first opium international congress held at Shanghai, March, 1909. He opened three hospitals in China—one at Peking, one at Tientsin and one at Shanghai; and during his residence there of eleven months treated four thousand Chinese without a fatality and with marked success in every way. Hospitals carrying out this line of treatment have been established in many of the larger municipalities of the east, and at his own hospital in New York City during the year 1915 there were treated nine hundred patients, three hundred and twenty-six of whom were drug addicts. Mr. Towns' method has been accepted by some of the leading men of our profession. Dr. Lambert, visiting physician at Bellevue Hospital and Professor of Clinical Medicine at Cornell, has been mentioned. Dr. Richard C. Cabot of Boston, whose work on "Diagnosis" we all know about, has investigated the method most carefully, and has, without the slightest reservation, put the seal of his unqualified approval upon the treatment of such cases by the method. Dozens of others of national reputation could be mentioned.

ITS SCOPE.

This treatment is not offered as a cure for mor-

phine or as a cure for delirium tremens or chronic alcoholism. It will, however, obliterate the terrible craving that these patients suffer when, unaided, they endeavor to get off their drugs or are made to go through the slow withdrawal without some medication to ease them. Compared with the old methods of slow withdrawal, it is to my mind markedly superior. Deprivation of a drug is in no way equivalent to elimination of that drug from the body. Deprivation causes suffering; elimination relieves it. But neither this combination of drugs nor any other combination known to men can prevent persons, after they are free from their addiction—be it alcohol or morphine—from going out and repoisoning themselves. It is my firm belief that, just so long as an addict lives and just so sure as he lives, he can never again take a drink of alcohol or a shot of morphine whatsoever without the danger of going again to excess. After patients have been freed from their drug and from the desire for it, they are by no means cured of their former habits of life and environment, and, more especially, of their former habits of thought.

THE METHOD—THE MORPHINIST OR OTHER DRUG ADDICT (EXCEPT COCAINIST).

A patient addicted to morphine is given five compound cathartic pills and five grains of blue mass, and six hours later, if these have not acted, they are followed by a saline; after three or four abundant movements of the bowels from these cathartics, the patient is given, in his habitual way, by mouth or by hypodermic, in three divided doses at half-hour intervals, two-thirds or three-fourths of the total daily twenty-four-hour dose of morphine or opium to which he has been accustomed. The physician should observe carefully after the second dose has been given, as the amount then equals either four-ninths or one-half the total twenty-four-hour dose. A few patients can not comfortably take more than this amount. Six drops of the belladonna mixture, which consists of—

℞ Tincturae belladonnae.....℥ii
(Use 15% tincture)
Fluidextracti xanthoxyli
Fluidextracti hyoscyami, aa.....℥i

are given at the same time as the morphine. This belladonna mixture in doses of six drops (and by drops I do not mean minims: I mean drops dropped from an ordinary medicine-dropper, which is about half a minim dose) is given every hour for six hours. At the end of six hours the dosage is increased two drops. The belladonna mixture is continued every hour of the day and every hour of the night continuously throughout the treatment, increasing two drops every six hours until sixteen drops are taken, when it is continued at this dosage; it is diminished or discontinued at any time if the patient shows belladonna symptoms such as dilated pupils, dry throat or redness of the skin, or the peculiar and incisive and insistent voice, and insistence on one or two ideas. It is begun again at reduced dosage after these symptoms have subsided. If the patient has an unusual sensitiveness to belladonna, it will usually show itself in the first six or eight hours, and the hourly dosage can be cut down to from two to four drops and raised by one drop every six hours. If, on the other hand, even sixteen drops, persisted in for twelve consecutive hours, do not give dryness of the throat, the dosage should be raised to eighteen or twenty every hour until the dryness occurs, and then the amount reduced.

At the tenth hour after the initial dose of morphine is given, the patient is again given five compound cathartic pills and five grains of blue mass. These should act in six or eight hours after they have been taken. If they do not act at this time, some vigorous saline is given, and when they have acted thoroughly, the second dose of morphine is given, which is usually about the eighteenth hour. This should be one-half the original dose; that is, one-third or three-eighths of the original twenty-four-hour daily dose. The belladonna mixture is still continued, and ten hours after the second dose of morphine has been given—that is, about the twenty-eighth hour—five compound cathartic pills are again given and five grains of blue mass; these again, if necessary, followed by a saline seven or eight hours later. After these have thoroughly acted at about the thirty-sixth hour, the third dose of morphine is given, which is one-sixth or three-sixteenths of the original dose. This is usually the last dose of morphine that is necessary. Again, ten hours after the third dose of morphine—that is, the forty-sixth hour, the five compound cathartic pills and five grains of blue mass are again given, followed seven or eight hours afterwards by a saline, and one expects at this time to see the bilious green stool appear. When this appears, after the bowels have moved thoroughly, about eighteen hours after the third dose of morphine, about the fifty-sixth hour of treatment, two ounces of castor oil are given to clear out thoroughly the intestinal tract. Sometimes it is necessary to continue the belladonna mixture over one or two more cathartic periods before giving the oil. About the thirtieth hour of treatment these patients should be stimulated with strychnine or digitalis, or both, every four to six hours.

MORPHINIST PLUS ALCOHOLIC.

In those cases addicted to both morphine and alcohol we treat as we do a morphine case and cut off all the alcohol immediately. If, however, on sudden withdrawal of the alcohol there is a danger of the development of delirium tremens, we may have to give some liquor at the beginning. If these cases should have an active gastritis, which complicates their ability to retain their medication or food, such condition will have to be remedied before the treatment can be instituted.

COCAINIST PLUS MORPHINIST.

If more morphine is used than cocaine, we usually treat it as that of a morphine addict, and vice versa. These are often very difficult cases to handle, and frequently become delirious. We give no cocaine whatever after treatment has begun.

COCAINIST.

This addict is treated like an alcoholic, except

that no cocaine is given at any time, and strychnine or some other stimulant must be given as a rule from the beginning of the treatment.

TOBACCOIST.

These cases are usually allowed to taper off during the first twenty-four hours, or, if possible, cut off abruptly, and treated exactly as you would an alcoholic.

ALCOHOLIC.

In treating an alcoholic, the belladonna mixture and the five compound cathartic pills and five grains of blue mass are given simultaneously at the first dose. The belladonna mixture is continued every hour of the day and every hour of the night, the same as with the morphine patients, and twelve hours after the initial dose, patients are again given from three to five compound cathartic pills, and at the twenty-fourth hour after the salines if necessary, and again at the thirty-sixth hour. After these last cathartics the bilious stools will appear, and by the forty-fourth or forty-fifth hour the castor oil is given. Sometimes it is necessary to carry on the treatment over another period, and the compound cathartic pills and blue mass are again given at the forty-eighth hour, which would bring the end of the treatment about the sixtieth hour. It may even be necessary to carry on the treatment one or two periods longer.

Elderly or very nervous patients who have been on a prolonged debauch are tapered off with two ounces of whisky for four or five doses through the first twenty-four hours. If these patients are excessively nervous, it is necessary also to see that they sleep, and the mixture of chloral hydrate, twenty grains, morphine one-eighth grain, tincture of hyoscyamus one-half dram, tincture of ginger ten minims, tincture of capsicum five minims, and water one-half ounce, is the best hynotic for them. These patients should also have cardiac stimulants, such as strychnine and digitalis, after the first twenty-four hours, or sooner if they are weak.

COMPLICATIONS.

(1) In certain cases nervousness and discomfort may arise before the treatment is finished. Such condition can usually be very readily controlled by giving hypodermically three to five grain doses of codeine, and repeat if necessary. If the case can not tolerate codeine (break out into an urticarial rash or fine red punctate rash, or having swelling or burning of the skin) relief can be obtained by dionine, which seems about twice as strong as codeine. It is given, therefore, in doses of about two or three grains or less.

(2) Pains in the joints and aching in the bones and muscles after treatment: A small percentage of cases will present these complications. This condition is usually relieved in twenty-four to forty-eight hours after codeine or dionine. Don't continue either more than forty-eight hours after treatment is ended. If the trouble continues, resort should be had to hydrotherapy and massage.

(3) Insomnia: This is occasionally troublesome after treatmnet is ended and usually responds to small doses of bromides and sodium-veronal. Probably the best hypnotic is muscular fatigue, and these patients should begin to exercise regularly and be built up physically as soon as their condition permits; hot blanket packs assist materially.

SUGGESTIONS.

(1) Quantity of cathartics: Attention is called to the fact that a very small person might not require more than three C. C. pills and three grains of blue mass, while on the other hand a very large person might require more brisk catharsis.

(2) Some of the cases are fairly well off their drugs or their debauch before reaching the hospital. In such cases it is rarely necessary to give any morphine or other drugs during the treatment.

(3 The C. C. pills should be fresh to secure good results.

(4) Many alcoholic or drug addicts suffer from chronic tobacco poisoning, which in alcoholics is the cause of periodic inebriety, or, in a drug case, the cause of its continued use. This is especially true of the excessive cigarette smoker and many others who inhale their cigar or pipe smoke. These patients smoke to excess, and becoming nervous, increase their smoking that their nerves may become quieted. Finally they become so nervous through their tobacco that they must take some narcotic to quiet them, and they turn to alcohol or drugs. The vicious circle can be broken only by cutting off the tobacco, and unless the tobacco is cut off on their release from the institution, they will stop neither alcohol nor tobacco.

WITH THE TOWNS-LAMBERT TREATMENT WE FIND:

1. A patient who, excepting in rare instances, can co-operate with the nurse throughout the course.

2. A patient who can tell you of his feelings and understands fully the method.

3. A patient who does not require constant supervision. One nurse can attend to many cases.

4. A patient who presents a clear mentality throughout.

5. A treatment lasting only from two to three days.

6. A treatment appreciated by the co-operating patients and generally commented upon, as they know they have passed through the ordeal with the minimum degree of discomfort.

RESULTS.

No claim is made that the final results of this method of treatment are any better than those obtained by any other method; the essential thing is to place the cases upon their feet as soon as possible and from a humane standpoint with the least discomfort to the individual.

No treatment with which I am familiar will do this so easily and so readily as the one described above.

I desire here to acknowledge my indebtedness to Dr. A. W. Hoisholt, Superintendent of the Napa State Hospital, for the privilege of administering this line of treatment at this institution.

THE PATENT MEDICINE EVIL.*

By PHILIP KING BROWN, M. D., San Francisco.

There are always four parties to the patent medicine evil—the manufacturer, the newspaper, the distributor, and the victim, and also too often the public hospital and the undertaker. It is not my purpose to point out the responsibility of those unscrupulous beings who prey upon the anxiety and depression of the sick by making and advertising substances which they claim will cure all of the common and most of the serious ailments of mankind. So bald and raw did their evil efforts become that the Federal Government finally clipped their wings by the passage of a pure-food law, causing some of them to suspend operations and forcing all of them to curtail their claims to a considerable degree. A long distance more must legislation go, before the skill of these nefarious individuals in getting their preposterous wares before the public can be circumvented. Ministers of the gospel, broken down nurses and doctors and socially prominent, but impecunious individuals, are the tools of this class, and schools in salesmanship are maintained by some of the more notorious of these vultures, all in an effort to elude the law and reach the public in some insidious way.

Newspapers have denied their responsibility of being censors of the morals and ethics of advertisers. They claim that they are not in the business for their health, and it is certain that they are not in it for the public's either. So powerful are the advertisers of patent medicines who must keep their wares before the public, that they have been able not only to buy the press with few exceptions, but to line up the press against any local legislation inimical to their interests. A free country and a free press! Yes, if one has money enough the country is fairly free and the press can be made free enough to say anything, even that black is white.

It is to the third party to the patent medicine evil—the distributor—that I wish to direct special attention. Most medicines, patent, proprietary and otherwise, pass through the hands of wholesale and retail druggists to the laity, but we cannot escape the unfortunate fact that doctors themselves have only too often been guilty of helping to disseminate some patent medicines. In so far as they are responsible they deserve the severest censure and any punishment that their fellows could justly inflict upon them. It is an evidence on their part of ignorance, indifference, and slovenly morals, for they have promised on being graduated into the medical profession to be guided by full investigation and knowledge of fact in all they do.

The wholesale druggist has escaped the public condemnation which he should have for his part in the distribution of patent medicines. He need not handle them at all; he could even handle them in single units; but not so; he is directed by the manufacturer to dispose of them on request from retailers in unbroken packages. And so there is dumped on the retailer, who wishes to hold all the trade he can, a dozen or two bottles or boxes of a patent medicine, when all he wanted to fill some order or prescription was a few ounces. With a whole case of the drug to dispose of the retailer only too often places it in a showy place to catch the eye of the solicitous searcher for health. So bad has this condition become that the manufacturer has been able to unload his wares all over the country, forcing even some of the highest class druggists to handle his nefarious doses. The further down in the scale of druggists one goes the worse is the evil, until near the bottom one finds the stores filled with patent medicines, with a shelf or two over a sink where a few established remedies are mixed and dispensed.

The metamorphosis of fully half of the druggists under the impact of modern greed is the most amazing feature of the patent medicine evil. Time was when the skilled chemist and compounder of doctors' prescriptions was their faithful ally in the healing art. But that time has passed and now far the most of the druggists are equally bound to another master whom they endeavor to serve without injury to their ancient prestige. That they continue to serve two masters whose interests are diametrically opposed is a triumph of skill and dual personality. That they continue to serve them without protest from any one is proof of the ignorance of the many and the cynical tolerance of the responsible few. Obviously they have so far clouded the real situation that to their original ally they say: "We are forced to carry the goods of the patent medicine man because the doctors order them and the public wants them." Nor is this all, nor the worst. Eager for a share of the swag they have gone a step farther, and capitalizing the public's eternal susceptibility to the largest pretension in the gaudiest form, they put up their own remedies for ailments, simple and complex, prescribe willingly over the counter, and adorn their show-cases and windows with large attractive bottles of cure-alls, greater in bulk and lesser in price than the contents of the doctor's prescriptions, and far more alluring in promise.

How insidious must be the suggestion of such a drug store to the sick and waiting patient who takes in a prescription to be compounded! While he waits, magic philtres play upon his hyper-sensitive sensibilities. Rows and rows of pleasing panaceas promise immediate alleviation of every known ill, from baldness to sudden death. And venturing among the luxuriant verbiage of the ads and testimonials he recognizes the very symptoms as his own. When finally he takes his expensive bottle (for which he has waited an hour), he sallies forth with a vivid mental picture of the much larger bottle at half the price, for the very malady the doctor said he had. The spell has come upon him and henceforth he is the marked-down victim. Suppose he is not better in a few days—the much larger bottle at half the price will suddenly flash into consciousness and in the suggestible state of most sick men he will try the remedy he has seen so temptingly advertised.

He has paid the high cost of looking.

* Read at the Southwestern Conference, Albuquerque, N. M., October 12, 1916.

And what a perfectly logical reaction it is. A master psychologist is your vender of nostrums, knowing well his American public—an uncritical public fed on the pseudo-science of the Sunday supplement and the pseudo-psychology of New Thought, Christian Science and Home of Truth, and finding in the pat phrase an excellent substitute for thought. Such a public will fall for the striking label and the flamboyant ad., as it falls for the catchy slogan in politics, or the pocket wisdom of the phrasemongers, without recourse to the painful process of cerebration. Thus the appeal of the glamoursome drug store is potent and the doping of symptoms begins—and with it the pathos of money wasted that can ill be spared, of precious time lost that can be spared still less, of habits formed that are beyond all cure. (Do you observe in passing, the enterprising instigator of habits still preserving his ancient prestige?).

The extent and variety of the symptom-dosing may be judged from a brief analysis of the commonest types of nostrums. Roughly we may divide them into three kinds:

(1) Those that cheer and yet inebriate, the contraband cocktails, so to speak, the festive Perunas, the joyous Swamp-Roots and the omnipresent Creme de Pinkhams;

(2) Those that soothe while they depress; the orangenies, bromo-seltzers, et al.;

(3) Those that fill you with false hope and harmless dope at $1.00 per 10 cents' worth. Of such as this is the much-exploited sanatogen, and the multitude of mitigated waters.

It is the subconscious sprees of the first class that swell the ranks of the liquor-users with thousands upon thousands of innocent topers,—women, professed white-ribboners and rebellious natives of prohibition districts. Dr. Ashbel Grinnell of New York, who has made a statistical study of patent medicines, estimates that more alcohol is consumed in patent medicines than in all the spirituous liquors sold by licensed liquor venders. The sudden increase of sales in "bitters," "sarsaparillas," "perunas" and "celery compounds" which everywhere follows a prohibition victory, tells its own story. Maine and Kansas and Oklahoma may have their accustomed jag while the druggist flourishes like a green bay tree.

To the headache powders, catarrh cures and acetanilide compounds generally, we owe a frightful increase in the number of neurotics, drug habitués and defective, if not criminal, classes, and they are taken in all innocence to stimulate heart action, produce better blood, and soothe the nerves (as the ads. so persuasively claim). The effect is quite the reverse,—they depress the heart, they contribute to anemia, they temporarily deaden, only to induce greater excitability, or a more poignant pain. In fact the only thing they do stimulate is a craving for more, and this craving persistently fostered by deceptive labels, and catered to by complacent nostrum venders, leads ultimately to the breakdown of physical, mental and moral integrity.

To the third class belong those much megaphoned elixirs of life that periodically set the world agog, run their little course of gulling and beguiling the world's fools and finally lapse into the limbo of things outplayed. These are the "liquozones" and "sanatogens"—innocuous frauds that promise the tired business man, and the nervous wreck, life, liberty and the pursuit of happiness on a capital stock of three-grains-of-corn.

But of all the frauds perpetrated by the patent medicine exploiters none is so tragic and heartless as the consumption-cure fakes, and none are more commonly indulged in, or more devoutly believed. To prescribe a drug where no drug will cure, to break down the resistive power, to encourage the relaxation of those rigorous rules of living, through which only can these sufferers be saved,—herein lies the cruelty and viciousness of those "cures." All who work with the tuberculous know the sadness of those last stage cases who have sacrificed the potentialities of cure to the deceits of "ozomulsions," "tuberculozyne," and "tuberclecide."

Just how strong is the habit of symptom drugging may be learned in a sanatorium. In my experience at Arequipa (a sanatorium at Manor, Cal., for early tuberculosis among wage-earning women) the daily appeal for drugs for every trivial ailment, every slightest irregularity of function, is a revelation of long-established habits of self-diagnosis and self-prescription. Is there one wakeful night? The demand is for a sleeping powder. A day of nervous instability? The plea is for bromide. A headache from whatever source, calls for antikamnia, while the nightly procession of kimonos calling for "salts" is a thing to stand the hair on end. In an effort to break this habit we have made it a rule never to grant a patient what she prescribes for herself even thought she hits on the right remedy, and to charge patients for drugs for any condition other than the tuberculosis.

An episode which illustrates the hold of the skilfully advertised patent medicine on the credulous and misguided laity may not be amiss:

A prominent lawyer once asked me why the medical profession was so narrow on the subject of patent medicine. He stated as an illustration that the local manager of the Fulton Compound Remedy for Bright's Disease and Diabetes, a classmate of his at a leading university, had shown him that day the extraordinary collection of testimonials from people cured of these diseases. I might have argued with him till doomsday that the facts would not bear out the testimonials, and failed to convince him, so I chose to make it worth his while to produce the proof, if he could, by offering him a large sum—$500.00—if he could produce a single case of chronic Bright's disease where three reputable physicians had concurred in the diagnosis and where Fulton's Compound had later effected a cure. He returned jubilant the following day with the story of a certain Judge B., well known in San Francisco, who was told by a prominent surgeon and later by his able assistant, that his ailment causing some heart disturbance was in reality chronic Bright's disease. Upon leaving the care of these two physicians the patient applied for a pension and was granted it after examination by a

board of army physicians on the diagnosis of chronic Bright's disease. The proof of the disease I could not dispute. After receiving the pension, friends persuaded the judge to try Fulton's Compound, which he did, and my lawyer friend reported him cured and produced a copy of his testimonial. I asked for a chance to examine the patient's urine, adding that I should prove by this very case the fraud which I knew had been perpetrated on the judge. I was never permitted to examine the urine and later learned that tests of the urine made by the Fulton Compound's own chemist showed half of one per cent. albumen, and the accompanying evidences of the chronic disease. The patient from over-effort during his kidney disease had heart symptoms; a rest and diet under his physicians' care relieved them and he was again a chronic nephritis case without subjective symptoms. Fulton's Compound may have done no harm, it certainly did not cure, and I doubt if it even did any good. It is fair to add that the manager appreciated the fraud he had innocently been perpetrating on the public and resigned his job, but the proprietors of this abominable atrocity still advertise their reputed cures and grow fat on their wicked gains.

But perhaps later you say, what of the druggist's defense that "the doctors prescribe patent medicines." A little investigating disposes of this. Letters to druggists in several parts of San Francisco representing the extremes of social conditions brought out these facts. Among the first-class drug stores patronized by the well-to-do, only one to three per cent. of the doctors' prescriptions called for patent medicines, while in several of the stores in outlying or poorer districts the number of prescriptions calling for these remedies in whole or part reached eight to twelve per cent. It is evident from this that we cannot escape some part of the responsibility of this distribution, though it is interesting to observe that the universal testimony of the best druggists was strongly against handling patent medicines and their use by doctors and that the demand for them from the laity is steadily declining.

Why then you may ask, try to regulate the druggist who is but one cog in the machinery of exploitation? Why not educate the public? Expose the frauds? Jack up the manufacturers? Insist on enforcement of the pure food and drugs act?

These methods have one and all been tried, and with partial success. Each has its limitations or its clogging technicalities and the sale of nostrums goes on. The processes of public education are slow and with our fundamentally faulty school system, far from sure. Curricula loaded with fads and frills but innocent of any training of the reasoning faculty, or the powers of observation and deduction, are largely responsible for the crimes of credulity which undermine the public health. Publicity campaigns are more immediately successful, but thrive chiefly as a nine-day sensation. In 1905 Collier's Weekly printed its exposé of the great American fraud with sensational effect and a net result of fifty per cent. reduction in the sale of patent medicines.

The A. M. A., in an effort to prolong this effect, issued a series of reprints and added a few choice revelations of its own which were disseminated broadcast over the country. The Post Office Department, through its provisions against fraud, has held up many vicious concoctions en route to the gullible. The Federal Food and Drugs Act has exercised what powers it has but these have strange unaccountable limitations and through chinks in the law many fakes contrive to escape. For instance, it is illegal to lie on the label but quite permissible to lie on a circular, a newspaper ad., or a show window. It is obligatory to declare on the trade package the composition and origin of a patent medicine, but these same important items may be omitted from a show card. The deadly compound which records its percentage of alcohol, morphine, acetanilide in very small type on the label may describe itself largely and engagingly as "mountain air in the veins," "wings of the morning" or "the quintessence of youth, beauty and the joy of living," in a single pill. The amount of alcohol, morphine, opium, cocain, heroin, eucain, chloroform, cannabis indica, chloral hydrate, and acetanilide, must be declared, but nothing need be said to indicate the presence of such dangerous drugs as prussic acid, aconite, arsenic and strychnine. Furthermore the Federal Law controls only the drugs which pass from state to state in interstate commerce, and has not one iota of authority over the drugs sold in the same state where they are manufactured. And when in the course of a Federal investigation of some suspected fraud, important discoveries are made, these findings are buried in official archives and never reach the public, the while prosecuting procedure drags and drags.

Such being the limitations of the law and the slow, cumbersome movement of its machinery, we come back to the druggist. How shall we make it possible for him to turn down the patent medicines, make a living and honestly maintain his ancient prestige?

I am convinced from a discussion of the whole subject with the high class druggists, that they hate the patent medicine situation as badly as do the doctors and that they would unite with the profession in putting it out of business, at least as far as they could through their channels. Would it not be possible, therefore, to establish in each community a list of druggists who were willing to keep no patent medicines for sale and who would refuse to compound any prescriptions calling for them? Let the medical society of each community publish through its notices of meetings a list of such drug stores to be known as the "white list" and let the secretary of the society distribute a few of these lists with each notice of meeting. In this way when patients ask "to what drug store shall I take this prescription?" it would be possible to do a very reasonable bit of advertising of the first-class places, who in return for this advertising protect their patrons and help to establish again the

proper relation between doctor and druggist. San Francisco advertises in this way the dairies that produce certified milk and the dairies that have passed an inspection as to hygienic conditions. It may be cutting down the work of doctors to thus point out how to rid the community of diseases due to bad milk and it may cut down the work of doctors to supply patients with good drugs, but I am sure this is the kind of lessening of our work that will not be objected to by any physician, and it would make it possible and profitable for the druggist to regain his old status as the physician's faithful ally in the healing art.

THE ABORTION EVIL IN A SMALL TOWN.

By WM. B. SMITH, M. D., Randsburg.

Probably the abortion evil is no greater in the small town in proportion to the number of inhabitants, than in the city, but it is certainly more conspicuous, and knowledge of the usual methods used to produce abortion seems to be almost universal among the women of this small town. That this should be so is, I believe, due to three factors: first, while an old quiet mining town, it is a saloon town of rather low moral standards; second, the people here are all pretty generally acquainted and it is easy for one woman to get the help of another wise in the ways of the world; and third, but not least, some previous practitioner here has been unrestrained by morals, law, or training from gathering in the dollars from this source, as is shown conclusively by the attitude of the half dozen women who have come to my office in the three months of my residence here with the idea of securing relief from an unwelcome pregnancy.

The "sop to conscience" used by one predecessor is common comment among the women here and was passed on to me by my wife. When approached by a woman seeking relief he is reported to have answered them, "I am not allowed to do abortions by the rules of my profession, but if you start it by using a stiff rubber catheter I will finish it for you and see that no harm comes to you." What a sense of security and safety must have followed him about, a sort of visible halo, among the women of the community! In running to earth the causes of the unexpected peritonitis and death of my first Mexican patient here, following cervical repair and shortening of the round ligaments, I learned that she had had seven curettements in the last three years and had successfully aborted herself some four weeks before coming to me for the repair work. This woman spoke no English and my only means of talking to her was through an interpreter. The indications for the repair work were definite, but only after her death was I able to learn the above details that would have warned me to delay operation for some weeks or months until all danger of spreading a latent endometritis was passed. No wonder this unlettered woman was able to interfere with herself successfully, she had been thoroughly taught and was entirely ignorant of the dangers involved. One could have some measure of sympathy for a doctor who thought this woman's seven children living were sufficient in a family where the father earns $3.50 per day, if he had quietly instructed her how to avoid further pregnancy. But what can be said for one who repeatedly curetted her after pregnancy, charging this same three-fifty-a-day man $25.00 each time his services were required!

How perfect has been the instruction in the community is again illustrated by a recent incomplete abortion which I had to finish. A young 200-pound matron of the community missed her menses, went to the next regular time, then decided she would relieve herself in the usual way. Some fore-handed neighbor woman supplied her with a stiff rubber catheter. Clad in a dirty kimona and old shoes, oiling the bent catheter, inserting a finger as guide, she claims that "one poke" was all she had to make with the instrument. She became frightened at the sudden profuse hemorrhage that followed, and sent a hurry call to me for help. Examination showed an old lacerated cervix which now admitted one finger easily and which bled so profusely at the least disturbance that a cervical and vaginal pack was needed to check it. A few pains during the night and one good expulsive pain the next morning delivered packing, foetus, and membranes, and I was again called to check the hemorrhage. The demeanor of this case throughout elicited not one sign of any feeling of wrong doing. She did not want a baby, she knew how to get rid of it, and what more simple than to rid herself of it! I wish some kind friend would tell me what to do with people like that!

So prevalent is this sort of knowledge in this town that I have been hesitating over a therapeutic abortion which I feel should be done for another patient of mine. The indications in this case are plain, simple, and imperative, yet I continue to hesitate for fear of being ranked in the popular mind with some of those who have gone before me. This woman has a baby under two years of age, and has now again missed her second menstrual epoch. She is still thirty pounds under weight, is anemic, and shows a thickened left pleura. With the birth of the first baby she was in bed for two months, first with thrombo-phlebitis of the left leg (milk leg she calls it), then with pleurisy with effusion, from which she finally recovered without tapping. She was cautioned at that time about becoming pregnant again, but she has been depending on her husband for preventive measures, and, as usual, this failed of efficiency. Now I shall have to relieve her sooner or later, but I sincerely wish she were financially able and willing to go to the city to have it done.

There are rays of sunshine through the darkness even of this benighted village. I have a woman now on my obstetric list five months along, and at least resigned to the inevitable, if not happy in the prospect of adding another to her family of one. After missing her second period she called upon my colleague in the town with a story of not being able to carry the child to term, and asked for relief. The doctor laughed at her, and then I was honored by a call with the same

story and the same request. I eased her off a little more gently by putting her to bed, making a thorough examination, and telling her I would watch her a few days and interfere if necessary. It did not become necessary, the authority of the husband was enlisted, and finally she was enrolled on my obstetric list.

How many chances the other doctor has had to turn down twenty-five dollars (which seems to have been the prevailing price heretofore) I do not know, but in my second month here, out of a population of six to eight hundred, I turned away three women who seemed to expect me to come promptly to their relief. One of these went in to Los Angeles where, friends tell me, she was "taken care of." The other two I still see about town, and am watching with considerable interest. The three doctors in this district now are all young, are trying to hold fast to essential professional ideals, and do not place dollars above morals, so that I hope to see a gradual readjustment of standards in this small town in time. This essential readjustment is much easier here than in the city, for what one woman learns every woman here knows sooner or later. If there are other small towns in the state where the same conditions prevail, the effective remedy is to first change doctors, and then have a few professional ideals impressed on the women of the community.

"THE USE OF THE ASPIRATOR FOR REMOVING PUS, BLOOD, EXUDATE, TRANSUDATE, AND BOWEL CONTENTS DURING SURGICAL OPERATIONS."

By EDMUND BUTLER, M. D., San Francisco, Cal.

The removal of blood and mucus from the pharynx during operations in the nose and throat by means of some suction apparatus is an accepted procedure. The use of the same apparatus by the general surgeon has been neglected. This method of removing blood, pus, exudate, transudate, cyst contents, and bowel contents, is very practical and efficient.

Any of the many methods may be used. (This article has no reference to the Potain aspirator.) The apparatus first introduced into surgery by Dr. Edward Cecil Sewall of San Francisco, California, is easy of construction, not costly and is reliable. Apparatus consists of an ordinary glass connecting tube, bore the size of a lead pencil, tipped with three-fourths of an inch of fairly stiff rubber tubing; the glass may be bent to any angle or curve. Six feet or more of pliable but not easily compressible rubber tubing connects this tube to a five-gallon glass jar. The jar is connected to an ordinary water pump aspirator attached to water faucet. See illustration. This gives a partial vacuum of sufficient, even aspirating force to carry away fluids encountered while operating. The tubing and jar are easily sterilized.

In abdominal surgery such conditions as abscesses, ascites, collections of blood, hydrops of the gall bladder, hydronephrosis, mesenteric cysts, and cystic ovaries, may be more easily dealt with by the judicious use of the aspirator. A trocar may be quickly substituted for the glass tip if desired.

The most spectacular as well as meritorious use of the aspirator is in the evacuation of abdominal abscesses, tubal, appendicular, diverticular, or perigastric, and transperitoneal removal of septic fluids. The abdominal wound and viscera are protected by gauze pads. The adhesions are slowly and carefully separated until the pus is released, the aspirator, manipulated by the assistant, nicely carries away the septic material. There is no saturation of the pads and unavoidable contamination of wound and viscera; pus-ladened sponges are not handled; assistants are not soiled; the danger of losing sponges is obviated; the technic if carefully carried out is time-saving and life-saving.

THE SEWELL APPARATUS.
This photograph displays an ordinary rubber tube for a tip instead of one described.

The assistant manipulating the tip will have better success if he compresses the tubing intermittently and alters the position by rapidly elevating and depressing the tip; these movements prevent the exhaustion of the vacuum, particularly if the quantity of material to be removed is small.

Large ovarian cysts are rapidly reduced in size without the usual procedure that is necessary when the syphon trocar is used. The possibility of the transplantation of malignant cystadenoma cells is less liable to take place.

In injuries resulting from gunshot wounds or stab wounds of the abdomen, bowel contents, blood and exudate are a considerable interference to the repair of viscera and blood vessels. The blood, bile and partially digested food wells through or around gauze packs and obscures the field just at the time a suture is to be placed; any sponging is very apt to change the relations, but the slender aspirator tip readily removes the offending

fluid without obstructing the view. The same is true in the repair of perforated gastric, duodenal, and typhoid ulcers, and ruptured hollow viscera, particularly a perforated ulcer or a traumatic rupture, if located in the sessile portion of the duodenum.

The field for the use of the aspirator is not limited to the nose and throat, and the abdomen. Any operative procedure where the wound is deep and the bleeding free, is benefited, as operations upon malignant growths in the region of the orbit or superior maxilla, tumors of the tongue, and substernal goitre. In the surgery of the long bones, where the fewer the sponges and instruments used the less the likelihood of infection, the aspirator may be used to a very great advantage.

The aspirator is not heralded as a substitute for sponges, but it has a definite place in surgery, and every operating-room should possess one.

PRACTICAL X-RAY WORK FOR THE GENERAL PRACTITIONER.*

By ALBERT SOILAND, M. D., Professor Roentgenology, College of Physicians and Surgeons, University Southern California.

As the number of men who are limiting their work to Roentgenology is so large, and with practically every hospital equipped with apparatus, there seems to-day to be little need for the general practitioner concerning himself with the trouble and expense of buying an outfit. For those, however, who are so situated as to be deprived of the services of a good Roentgen laboratory, and who are desirous of doing their own work, it is well to spend some time to learn the fundamentals and then ascertain just what to buy to suit their individual needs. There are other men, however, who live in communities where there are a number of excellent X-ray institutions and who could get such service both efficient and economical, yet spend a great deal of money for apparatus of their own just because Dr. So-and-So across the street has just installed the biggest X-ray machine west of New York. Here then we find a really expensive plant bought largely because the benevolent salesman assured the doctor that he would immediately become a master Roentgenologist and skin the fellow across the street a mile in taking X-ray pictures, and best of all, make a lot of easy money. The proud possessor of this modern plant now starts out to accomplish all that he expects to do, but soon realizes that all is not quite so simple as he contemplated. He sees that there is considerable to learn, that his pictures are not always like those in the catalogue, that the expense of running his outfit is not inconsiderable, and strangest of all, the expected easy money is not forthcoming. At this stage of his evolution, he discovers that he has spent so much time over his X-ray machine that his general practice is being neglected, and that if he intends to really learn the X-ray work he will have to practically give up a practice he has been years in accumulating. By this time his better judgment reasserts itself and he relegates his X-ray plant to an assistant, and once again resumes his practice. This, gentlemen, is not an exaggerated picture. I know personally of a half dozen such instances in our own community. The point I would like to emphasize is that one cannot take a flyer in X-ray work just for appearance sake. It is serious and difficult work at best, and demands one's entire time and attention, if it is to be conducted along lines that are compatible with the march of medical progress. These remarks are not intended to discourage those who really desire to take up Roentgenology, for no specialty in medicine is developing faster, and there is a positive demand to-day for competent Roentgenologists.

Now as to what constitutes practical X-ray work. Assuming that all mechanical, electrical and technical points are understood, the work comes under two general heads, therapeutics and diagnosis. The former is by far the most complex, if not the most important, and we are all still in the kindergarten class of knowledge upon this subject. Briefly, the present proven field of X-ray therapeutics is (1) the localized dermatoses both benign and malignant, those that do not respond readily to other approved medical or surgical means, and (2) the as yet unproven field of deep therapy. This covers glandular disease, and all pre and post operative attempts upon the viscera. My own views upon the matter of X-ray therapeutics has recently been presented in other communications and will not be foisted upon you at this time.

That which will interest you more perhaps is the diagnostic end, and here again we have two divisions, the visualizing screen, examination and the photographic plate. The fluoroscopic screen has a large field of usefulness, but its constant use demands that it be surrounded with every protective means available. The very fact that we actually render visible to the eye, both physiological and pathological changes in the living subject renders this mode of examination so interesting that one is apt to overstep the time limit of safety during an observation. While the patient might easily escape any serious results, even from one or two prolonged examinations, the repeated saturation of the observer would soon lead to grave symptoms, which are all now too well known to the early workers in this science. Screen examinations if made briefly and under modern protection are quite safe. The regions best studied by the screen are the chest, where early changes may be observed in the lungs, as well as heart and mediastinal conditions. Visualization of the stomach and intestines by means of opaque meals is also of great value, but beyond this it is best to rely on the photographic plate, as for instance bone lesions and fractures. The inspection of fractures by the screen is as a general rule unsatisfactory and bone changes can be studied with so much better satisfaction upon the plate. The same holds true for foreign bodies. There have been more X-ray burns follow the attempted re-

* Read before Pacific Coast Roentgen Ray Society, San Francisco, Cal., December 9, 1916.

moval of a needle or bullet by means of the fluoroscopic screen than in any other form of X-ray work. It is so much easier and safer, also far more accurate, to localize the foreign body by means of plates taken in two or more angles. To make a long story short, use the photographic plate whenever possible and use the fluoroscopic screen only in those cases where the plates do not give the desired information.

So we go on with what we had in mind to write about, namely, the discovery of a new class of human beings, a class just like ourselves, with the same capacity to be happy and miserable, but a class that seems to have escaped the beneficent and benevolent eye of humanity up till now. We refer to the indigent aged. There are hospitals and homes, there is a distinct literature, there are conventions and conferences for apparently every other class of people in the world—but for the aged, there is a waiting place for eternity, and an infinitely small niche in the hall of oblivion.

But now there seems to be a new day for the aged. They seem to be human, even as you and I, and entitled to at least a casual survey at the hands of trained and sympathetic students.—The Modern Hospital, July, 1917.

Book Reviews

First Lessons in Spoken French for Doctors and Nurses. By Ernest H. Wilkins, Algernon Coleman and Ethel Preston. Chicago. The University of Chicago Press. 1917. Price 50c.

This seems to be a useful little pocket aid in learning the elements of medical French. A man who carries it about him and studies it in his spare moments should, with a little practice in pronunciation, be able to pick up enough French to make himself understood. L. E.

The Kingdom of the Mind. How to promote intelligent living and avert mental disaster. By James Mortimer Keniston, M. D. New York. G. P. Putnam & Sons. 1916.

This book takes up in a very readable way the factors that make for a wholesome mental existence. While no new ideas are brought out, the work thoroughly accomplishes its purpose in giving to those interested in mental hygiene a clear, entertaining account free from confusing theories and technical phrases. H. G. M.

Handbook of Suggestive Therapeutics and Applied Hypnotism. By Henry S. Munro. 4th ed. St. Louis. Mosby Company. 1917.

This book is a complete manual and an instructive exposition of applied psychotherapy. It deals with the latest advances of this much neglected subject and gives practical advice, not only to the specialist for nervous and mental diseases, but to the general practitioner as well. The book fascinates the reader with its many interesting demonstrations and scientific explanations of facts taken from daily medical practice; facts which have hitherto grossly been overlooked by medical men. It is well written from a literary standpoint, and easily intelligible. A. G.

The Treatment of Emergencies. By Hubley R. Owens, M. D., Surgeon to the Phila. General Hospital; Asst. Surgeon to the Phila. Orthopedic Hospital and Infirmary for Nervous Diseases; Chief Surgeon to the Phila. Police and Fire Bureaus; Asst. Surgeon Medical Reserve Corps, U. S. Navy. 12mo volume of 350 pages, with 249 illustrations. Philadelphia and London. W. B. Saunders Company. 1917. Cloth $2.00 net.

A surgical monograph dealing in a simple and cleancut style, with the usual emergencies that are encountered in a large city.

The text comprises a series of lectures that the author has given to many pupil nurses and the members of the police and fire departments of Philadelphia. Dr. Owen manifests a clear understanding of just how much the average student of first aid is able to master. The procedures recommended are simple and practical. This book will be of extreme value to any physician giving lectures on emergency treatment and the training of medical corps men.

A great many procedures described are of much value to every doctor, particularly in the chapter on transportation of injured persons. The warning that many simple fractures are compounded by improper handling and that lives are lost by hauling injured persons to a hospital when they could be saved if proper first aid treatment were given at the time of the accident, is fitting. The illustrations are appropriate and very instructive. The definitions are short, not technical and well suited to work on first aid. E. B.

New Method in Diabetes. By J. H. Kellogg, M. D. Battle Creek. Good Health Publishing Co. 1917. Price $2.50.

The new method in diabetes by Dr. Kellogg, as stated in the preface, is intended for the use of nurses and patients, but as a matter of fact, it is in many places certainly beyond the mental range of the layman. At the same time it contains so much valuable material put in such excellent form as to be of decided advantage to the general practitioner of medicine. The book does not purport to go into the minutiae of the pathology of diabetes, or to summarize the bases of the recent advances in the theory of treatment, but it does give in very succinct form a good explanation of the grounds for the Allen method and provides in the form of tables and recipes an excellent groundwork for the daily treatment of diabetes. It is probably true that few other classes of cases give more trouble to the physician in the matter of directions than does diabetes. Dr. Kellogg, by the excellence of his charts, and the descriptions of 130 dishes suited to the dietary of diabetics, with the calory values of their constituents, provides an excellent escape from our usual dilemma. Did the book contain nothing else but the recipes it would be well worth a place on our library shelves.

It should be mentioned that Dr. Kellogg lays great stress on the subject of constipation and upon a correct condition of the abdominal musculature. He gives excellent directions for the treatment of diabetic cases along this line. H. D'A. P.

Diseases of the Genito-Urinary Organs and the Kidneys. By Robert H. Greene, M. D., Professor of Genito-Urinary Surgery at the Fordham University, New York; and Harlow Brooks, M. D., Professor of Clinical Medicine, University and Bellevue Hospital Medical College. Fourth Edition, Thoroughly Revised. Octavo of 666 pages, 301 illustrations. Philadelphia and London. W. B. Saunders Company. 1917. Cloth. $5.50 net. Half morocco, $7.00 net.

The new edition of this eminently useful book will be welcomed by the general practitioner as well as by the urological specialist as a valuable addition to their library. In clear and concise language those methods of diagnosis and treatment

are dealt with that have stood the test, according to the authors' own ripe experience, while speculative views and methods unsuitable for general work are either only briefly mentioned or not considered at all. Thus the authors have attained their goal, to make the book of practical value and to base theory and practice on a sound pathological and physiologic basis.

Particularly conspicuous, in this connection, is the introductory chapter dealing with the general examination of the patient, which abounds in many useful suggestions and which, on account of the complete and circumspect presentation of the subject, is a veritable masterpiece.

The authors' views on the more recent additions to the urological diagnostic and therapeutic armamentarium (pyelography, operative cystoscopy, etc.), are, while up to date and progressive, always sane and conservative. Simplicity and delicacy, as well as practical experience, are the key-notes of the chapter on instrumental examination, the scope of which is treated in an entirely modern fashion, with the exception of two pages devoted to the description of the now obsolete urinary segregators. Consideration of the more complicated functional tests, the intricate technique of which tends to relegate them to laboratory workers only, like the methylene blue, the polyuria, the cryoscopy tests, etc., have been eliminated from this edition, while practically commodious tests, like the phthalein, the phloridzin, the blood-nitrogen tests, are fully described.

The authors' adverse criticism of spinal anesthesia is apparently not based on extensive personal experience. Their attitude towards the value of the complement fixation test for the diagnosis of gonorrhea is rather reserved and non-committal. Such statements contained in the interesting chapter on the blood in diseases of the kidney as: "Periods of great faith in this or that test, with growing experience, have given way only to a more firm reliance on the value of the clinical picture of each individual case, taken as a problem by itself," and: "There is now a general tendency to overestimate the dangers of high blood pressure and to resort to frantic measures to artificially reduce it," amply testify to the sound teaching pervading the book. Particular mention in this connection deserves the chapter on the surgical treatment of Bright's disease, which proves the progressive spirit and, at the same time, the conservative judgment of the authors.

In the chapter on stone in the bladder due credit is given to the work of our own late Dr. Geo. Chismore, and the only discord in this connection is sounded when our general confrere, Dr. E. G. McConnell, as in the former edition, is mentioned under the "nom de plume" McCormack. But while this lapsus linguae is somewhat excusable, the reader can hardly reconcile his philological conscience to the numerous linguistically and grammatically erroneous quotations of Latin phrases and foreign references, the correction of which would certainly add to the dignity and charm of future editions of this otherwise excellent urological handbook.

The description of operations is frequently illustrated by a brief report of personal observations, by which means the text is rendered less dry and, at the same time, more instructive. Print and illustrations are faultless. It can safely be predicted that the fourth edition of the book will add many new friends to the numerous admirers it had in the past. M. K.

Correspondence

AN OPEN LETTER.

You ask why I do not try Christian Science on my paralysis? There are several answers which might be given. Perhaps the easiest answer is that, from a Christian Science basis, to "try" Christian Science formulae insures failure. Absolute faith in the formulae is the key to its efficacy. That I do not possess. In fact I have absolute lack of faith in it. So you will see that, even from your own point of view, I would just as well recite the multiplication table.

I hear you ask why I do not believe in it? The easiest answer to that is, that the evidence adduced does not convince me, beyond a reasonable doubt, that it is true. I am requested to believe there is no such thing as disease. That what we call disease is only "error." My right hand trembles and is beyond my control. It does not make a particle of difference to me whether you call that a condition or disease or an "error." The evidence of my senses, interpreted and correlated by my brain, convinces me that I am afflicted by what I call paralysis. It is immaterial to me what it is called.

Christian Science tries to tell me that my senses and my brain have deceived me; that the whole thing is "error." I know of no way of gaining knowledge but by experience and observation. Christian Science demands that I discard the use of my brain and my senses. How, then, am I to gain a knowledge of Christian Science? Your tongue, my ear, my brain, are not trustworthy!! Christian Science tells me that there is no such thing as matter. That all we see, hear, touch, taste and smell is "error." Where, then, am I to get truth? Only emotion is left! I cannot conceive of emotion without sense. Where came this knowledge to the Christian Scientist? From Mary Baker G. Eddy. Whence did she get it? She says, from God!!! I believe in God. He created the world and everything in it. He did not create a lie!! The things which He created are true things. He created my brain and all my organs of sense. These are telling me the things which He ordered them to tell me. If they lie, God is lying!!! I believe the evidences of my senses in spite of Christian, or any other science!!! You say that you believe in it, and I have no doubt that you think you do. But every time you partake of food or drink, you deny it!!

Your actions speak louder to me than do your words. Bear in mind that I am not trying to proselyte you. I have not the slightest objection to your preaching and practicing Christian Science so long as you do not let it lead you unnecessarily to expose yourself to infection and contagion. If you should go to live on the island among the mosquitoes, I desire to warn you, as did the cowboy friends of "Ruggles of Red Gap," when they were compelled to sleep in the open, warn him of the terrible animal called the "High-behind." "High-behind accurately describes the attitude of the Anopheles mosquito when at rest upon the wall; and this is the mosquito which inoculates people with malaria. If a sufficient number of them bite you, it will take a lot of Christian Science to convince you that you have not a genuine attack of "chills and fever." Look well to your screens, and keep him out and yourself in, from sunset to sunrise, for only by so doing will you be safe. Ruggles imagined that the "High-behind" was some terrible beast like a man-eating lion or tiger, and he really is about as dangerous.

Just one more word of caution and I am done with the subject. Never allow yourself to go around the community, scattering germs of disease among your neighbors and their children, lest the greatest of all "errors,"—death,—overtake them. Death is no respecter of Christian Science, as is evidenced by the fact that its founder is dead. —(Contributed by Dr. J. R. Jones, Secretary Siskiyou County Medical Society.)

A LETTER WORTH READING.

Eureka, Cal., July 26, 1917.

My Dear Doctor:

I have acquired the exclusive right to use in the State of California from two German chemists who recently discovered medicines that will absolutely cure Bright's Disease, Sugar Diabetes, Gall Stone and Stone in the Bladder. I am making wonderful cures of these diseases. I assume that you have many cases under treatment and are not getting satisfactory results.

I would like to correspond with you in reference to your patients and I think we can make some arrangements so that a quick cure can be made, which will result in our mutual benefit.

Thanking you for an early reply, I remain,

Yours truly,

DR. W. H. WALLACE,
By W. G. Press, Secretary.

[The letter above was sent to the Journal by the doctor who was so fortunate as to receive it from the author. It is our hope that it may afford as much pleasure to the readers of the Journal as it did to the original recipient. The following clipping in reference to the same matter will add to the reader's pleasure.]

(Eureka, Cal., Standard, Aug. 4, 1917.)

NEW SANATORIUM OPENED IN EUREKA.

A new sanitorium has been established by Dr. W. H. Wallace and Whiting G. Press, in the Georgeson building, for the treatment of Sugar Diabetes, Bright's Disease, Stone in the Bladder and Gall Stones.

Dr. Wallace has been actively engaged in the practice of medicine in Eureka for thirty-four years, and is one of our prominent physicians. Mr. Press has made this his summer home for nineteen years. Both are very well known in Humboldt county.

Mr. Press a Sufferer.

Mr. Press had been suffering from Sugar Diabetes and Bright's Disease for several years, and when he returned to Chicago last fall he learned of two chemists who have made a study for years of trying to find out new medicines that would cure what the medical fraternity considered incurable diseases. He placed himself under their treatment and was pronounced absolutely cured in twenty-eight days after starting to take the medicine. On his return here in May last, he found that Dr. Wallace was suffering from Sugar Diabetes, and he got some medicine for him, and he was cured in fourteen days. This made them feel that this was something that should be introduced in California; therefore they secured the exclusive right to use the medicine in this state, and now are treating a large number of patients with unparalleled success.

Some of the Cured.

Dr. Wallace has among the cured W. D. Tyron of Crescent City, who was sent home from the Lane Hospital in San Francisco as an incurable case, his analysis showing from twelve to fourteen per cent. sugar, and it only took five weeks of treatment for him to be in a normal condition, free from sugar.

Allen Johnson, a young man twenty-one years old, residing in Eureka, afflicted with Bright's Disease, showing an analysis of eighteen per cent. albumen, is now albumen free after a treatment of four weeks. This young man was sent from the Saint Helena Sanatorium home as an incurable case.

Cured in Three Weeks.

Mrs. McBreen of Scotia, who had been suffering years with Sugar Diabetes and showed an analysis of ten per cent. sugar was cured in three weeks' treatment.

Bright's Disease and Sugar Diabetes are both considered by the medical fraternity as very difficult troubles to cure. Gall Stones and Stone in the Bladder can be cured in from four to six weeks without the use of the knife.

Mr. Press came here nineteen years ago for his health, having been sunstroked four times in Chicago, which made it impossible for him to live in a warm climate in summer. This being the lowest temperature in summer time has been shown by the Signal Office in Washington, therefore making it one of the most ideal summer climates in the United States.

People suffering with Sugar Diabetes, Bright's Disease, Stone in the Bladder and Gall Stones will make no mistake in coming here to be cured, and while here in summer time will find an ideal summer resort so far as cool and pleasant weather is concerned.

State Society

IMPORTANT NOTICE—TO CONTRIBUTING MEMBERS OF THE INDEMNITY DEFENSE FUND.

Notes are now becoming due.

Do not let your membership lapse.

Each member will be informed ten days in advance of the due date of his note.

DEFENSE AFFORDED ONLY TO MEMBERS WHOSE DUES ARE KEPT FULLY PAID.

Medical Defense Rules, Section 3: "Dues must be paid to the Secretary of the County Medical Society to which each member belongs prior to the end of February of each year. Any member whose dues are not paid prior to March 1st and whose name is not reported as having paid his dues by the Secretary of his County Medical Society is dropped from the list of members in good standing as of January 1st of such year, and such member is deprived of Medical Defense afforded by the State Society for the period from January 1st of such year to the date when his assessment is received by the State Society. Members whose assessments are not received on or before February 15th of each year will be notified by letter from the Secretary of the State Society of such fact."

The State Board of Health reports under date of August 4, 1917, that two human cases of anthrax were reported from San Francisco, contracted at Los Palos, Merced County, while skinning a dead cow. An outbreak of 15 animal cases in central Yolo County is under control.

The National Board of Medical Examiners held its second examination in Washington, D. C., June 13 to 21. There were twenty-four qualified candidates, twelve of whom appeared for examination, the others having been ordered into active duty between the time of their application and the date of the examination. Of the twelve who took the examination nine passed. The next examination will be held in Chicago, October 10 to 18. The regular corps of the Army and Navy may be entered by successful candidates, without further professional examination, providing they meet the adaptability and physical requirements. There will also be an examination in New York City in the early part of December.

Physicians are required to register and pay special tax at each place where narcotic drugs are kept in stock for dispensing purposes, no matter

how small the quantity. An inventory of narcotic drugs must be made for each place of registration, and the records under such registration must be kept separate and distinct from any record at another office. All narcotic drugs in the possession of a physician, including those contained in a pocket case, must be inventoried at the time of applying for registration. The records should show from which stock of drugs pocket case is replenished in order to account for their disposition when the records at any office are checked up by an inspecting officer.

Separate registration should be applied for in case a stock of narcotic drugs in any considerable quantity is kept at a summer camp. When only a small supply of narcotics is carried in a medicine case to a summer camp for emergency purposes it would not be necessary to register again, but the record at the home office should show amount and kind of drugs removed for that purpose and their disposition.

Attention is called to the editorial in this number on the "Danger of Botulism." Physicians knowing of cases are requested to communicate without delay with Dr. E. C. Dickson, Stanford University Medical School, San Francisco, Cal.

Dr. Thos. W. Huntington of San Francisco has received an appointment which reflects honor on the medical profession of California, in his election to the presidency of the American Surgical Association, which meets in June, 1918, in Cincinnati. Dr. Huntington is a member of the General Medical Committee of the Advisory Commission of the Council of National Defense, and has recently been appointed one of a mission to Italy to investigate conditions relative to American Red Cross assistance in that country.

The result of the investigation made by the State Secretary, relative to "Officers' Reserve Corps and Pensions," is in substance, as follows:

"Under the law, officers of the Reserve, if incapacitated, are entitled to a pension, and, if killed in action, their heirs are entitled to six months' pay of the grade held at the time of death. In addition, the family is entitled to pension."

This was obtained through correspondence with the Secretary of War, the Council of National Defense, the Surgeon-General of the U. S. Army, the Secretary and Chairman of the Senate, our two California Senators and eleven Congressmen, as given in the July issue of the Journal.

The question was recently raised as to what stand the Insurance Companies had taken on the matter of the Medical Section of the Officers' Reserve Corps and Military Service in the present war, and the effect on insurance rates.

We understand that at a recent conference between the Commissioners of Insurance and representatives of life insurance companies it was recommended that a war clause be adopted by the companies. This war clause states that a sum of not less than $37.50 annually per $1000 of insurance be added to the premium where a war hazard exists or is contemplated. This applied to **applications** on members of the National Guard, Militia or Naval Reserve, Officers' Training Camps, Physicians, members of the Red Cross or Ambulance Corps and men contemplating service in any of these or similar branches at the time the application is written. These applications will be entertained for amounts up to $5000. This recommendation has been adopted by most life insurance companies, and the war clause is embodied in policies issued. It is supposed that this amount will be adequate to cover the extra hazard imposed, but as it is obvious that no one can foresee the result of the mortality of the war, it may be considered necessary at some future time to increase this extra premium.

In some companies a provision is made for pro rata refund to insured, after the termination of the war, of any excessive amount that has been collected in the way of extra premiums, such amounts to be determined upon investigation of the mortality resulting from the war.

It would appear that most companies charge no extra premium on policies issued prior to April 8, 1917, where such policies contained no restriction as to military or naval service.

There have been no deaths from typhoid fever during the first five months of the year in thirty-two counties of California, according to the California State Board of Health. These honor counties are: Alpine, Calaveras, Colusa, Contra Costa, Del Norte, Glenn, Kings, Lake, Lassen, Madera, Marin, Mariposa, Mendocino, Merced, Modoc, Mono, Monterey, Napa, Nevada, Placer, Plumas, San Benito, San Luis Obispo, Shasta, Sierra, Siskiyou, Sutter, Trinity, Tuolumne, Ventura, Yolo and Yuba. The seventy-four deaths reported during the same period occurred in the remaining twenty-six counties. One-third of these deaths were in the large cities of San Francisco and Los Angeles, where about one-third of the population of the State is centered. In spite of the good records made by these thirty-two counties, typhoid is about as prevalent this year as it was last year during the same period. If California is to maintain her good record in typhoid control, every county in the state must be active in the control of the disease within the county. The State Board of Health through its Bureau of Sanitary Engineering will aid any community in improving water supplies and sewage disposal. The Bureau of Communicable Diseases will investigate extensive typhoid outbreaks and will supply physicians with anti-typhoid vaccine, free of cost. With the facilities for control that are now available, it is inexcusable for any county to have a high typhoid rate.

County Society News

BUTTE COUNTY.

Dr. Edward E. Baumeister has been appointed Associate Editor of the Journal.

LOS ANGELES COUNTY.

During the early part of August a new branch laboratory for the State Board of Health will be established, to be located in the Union League Building, Second and Hill streets. The corps that will be located here will include a state bacteriologist, an assistant sanitary engineer and a district physician.

Under new regulations, the state will be divided into six districts, and a district physician placed in charge of each. The district whose headquarters will be located here will include the counties of Los Angeles, Santa Barbara, Ventura, Orange and San Diego. The other counties of Southern California will constitute another one of these six districts.

MENDOCINO COUNTY.

At the meeting of the Mendocino Medical Society on June 9th, Dr. Oswald H. Beckman was elected corresponding editor from the county for the California State Journal of Medicine.

Dr. H. H. Wolfe of Albion has been accepted

for the Army Reserve with rank of First Lieutenant, and he may be called at any moment.

Dr. R. H. Hunt of Bartlett Springs has received word from Washington that he has been accepted in the Naval Reserve force as Assistant Surgeon, with the rank of lieutenant.

SAN DIEGO COUNTY.

The San Diego County Medical Society continued its regular meetings through July, the first, on July 10th, being given up chiefly to discussion of measures to conserve the practices and protect the families of the members called to the service of their country. The second meeting, on July 24th, was a clinical night held at the County Hospital, where Drs. Churchill, Doig, Little and Jennison presented interesting clinical cases. In August is scheduled a social evening and a joint paper by Drs. Jas. Jackson and R. J. Pickard on the treatment of eczema with autogenous colon bacillus vaccine.

Dr. H. C. Loos who recently left practice to accept a captain's commission in the army is now Major Loos, stationed at Douglas, Ariz.

The Medical Library has recently moved into its new quarters on the twelfth floor of the American Building, where quietude, cool air and fine north light combine to attract the student.

The San Diego Diagnostic Group Clinic continues to hold the interest and enthusiasm of its large staff of specialists and has little difficulty in securing problem cases for diagnosis up to its capacity.

SAN FRANCISCO.

Dr. Russell C. Ryan of the Mount Zion Hospital, San Francisco, has been commissioned as an officer in the United States Navy, and has been appointed Assistant Surgeon at the Naval Training Camp at San Pedro.

SAN MATEO COUNTY.

Dr. F. S. Dolley announces that building will start on a new $40,000 South San Francisco Hospital September 1st. The hospital company will be incorporated. Plans have been perfected.

SANTA BARBARA COUNTY.

The doctors in the Santa Barbara County Medical Association have agreed to return to the families and dependents of the doctors of the Association who enter military service one-half of the fees from patients which these enlisted doctors leave in the charge of the doctors remaining at home. A formal resolution to this effect was passed by the County Medical Association at a special meeting.

The speakers at the meeting estimated that in the war now on the United States will need 40,000 doctors. Southern California quota of this number is about 600, or one out of every five doctors in the southern part of the state. Ventura County has about thirty doctors, counting active and retired members of the profession.

VENTURA COUNTY.

Dr. C. A. Jenson was made corresponding editor to the editorial staff of the California State Journal of Medicine.

Dr. Will I. Lewis has received his commission as Second Lieutenant in the Medical Reserve, has been called to the colors, and is at present taking training at Fort Riley, Kansas.

Dr. Benjamin E. Merrill has received his commission as Second Lieutenant and is waiting orders from the Government to go into training camp.

YOLO COUNTY.

Dr. Fred R. Fairchild, of Woodland, has received a commission as captain in the United States Medical Corps and is slated for immediate service, whether in the war zone or in the United States is not yet known.

Military News

Dr. Joseph Catton and Dr. Chas. Levison have organized an army base hospital unit from the staff of the San Francisco Hospital. The organization has been facilitated by the active co-operation of Mayor James Rolph, the San Francisco Board of Health, Col. Edie, Department Surgeon Western Department U. S. A.; Marshall Hale, president of the San Francisco Chapter of the Red Cross; A. B. C. Dohrman, in charge of the Red Cross Supplies on the Pacific Coast; Major Thos. Huntington and Dr. Emmett Rixford, National Committeeman of Red Cross in charge of medical affairs on the Pacific Coast. The personnel includes 22 doctors, 3 dentists, 65 nurses, 10 civilian employees and 153 enlisted men. The professional personnel is made up largely of men who are or have been associated with the various services at the San Francisco Hospital. The enlisted men have come from the two State universities and business houses about the bay.

The nursing staff must be made up of graduate registered Red Cross nurses, and, while there have been numerous applications, the enrollment has been proceeding slowly because of these requirements. Miss Elizabeth Jamieson, Chief Nurse of the unit, can be reached at the St. Francis Hotel, San Francisco, by nurses wishing to enroll.

The War Service Committee of the Medical Women's National Association has organized the American Women's Hospitals for work at home and abroad. The Surgeon-General of the Army and the General Director of the Department of Military Relief of the American Red Cross have approved the provision made for service to the army and to the civil population. The work will be officially part of the medical and surgical service of the American Red Cross.

The scope of the plan is broad, including units for maternity service and village practice in the devastated parts of the Allies' countries and hospitals run by women for service there as well as for the United States army in Europe. In this country acute and convalescent cases will be treated in hospitals equipped for the purpose; soldiers' dependents will be cared for; interned alien enemies will be given medical aid and substitutes will be provided to look after the hospital service and the private practice of physicians who have gone to the front. The first units hope to go to France and to Serbia in the early fall. Headquarters have been established at 637 Madison avenue, New York City. Dr. Rosalie Slaughter Morton is chairman of the War Service Committee.

Secretary Daniels has recommended to the President for appointment as Assistant Surgeons of the Navy, two hundred and seventy members of the Medical Reserve who have passed their examinations and qualified for appointment.

Of this number eighteen are from California, as follows:

Chas. A. Ainslie, San Francisco-Danville; William W. Behlow, San Francisco; Claude E. Brown, Sacramento; Joseph I. Callanan, San Francisco;

Herbert S. Chapman, San Francisco; Rushmer C. Christiansen, San Francisco; Robt. M. Furlong, San Francisco; Ramon A. Gilbert, San Francisco; Edward R. Guinan, Berkeley; Benj. H. Hager, San Francisco; Lynn N. Hart, San Francisco; Jay Jacobs, San Francisco; Glen M. Kennedy, San Francisco; Robt. Lorentz Jr., San Francisco; Francis J. McCarthy, San Francisco; Joseph A. Owen, San Francisco; John F. Pruett, San Francisco; Marshall G. Williamson, San Francisco.

The following Californians received appointments as Assistant Surgeons of the Navy as the result of an earlier examination:

E. P. Cook, Oakland; Dunnligh Corey, San Diego; B. P. Davis, San Francisco; T. B. Dunn, San Francisco; L. Gerdine, San Francisco; O. R. Goss, Berkeley; F. G. Linde, San Francisco; L. M. Morris, Berkeley; M. J. Price, San Francisco; J. M. Reuling, San Francisco; F. H. Rodenbaugh, San Francisco; J. C. Ruddock, Ukiah; Henry Searls, San Francisco; A. E. Schmidt, San Francisco.

The following Assistant Surgeons of the Naval Medical Reserve force are on active duty or awaiting active duty in this District:

Frank Ashmore, San Francisco; C. W. Butler, San Francisco (Red Cross Hosp.); G. D. Barnett, San Francisco (Red Cross Hosp.), W. P. Blake, Los Angeles; F. J. Bryant, Soledad; H. H. Chamberlin, Los Angeles; W. E. Chamberlain, San Francisco (Red Cross Hosp.); J. F. Churchill, San Diego; Gordon T. Courtenay, San Diego; John B. Craig, Upland; J. W. Crossan, Los Angeles (Red Cross Hosp.); A. R. Dickson, San Francisco (Red Cross Hosp.); R. H. Connell, San Diego; N. F. Dorn, Los Angeles; B. Duncan, San Francisco; J. W. Ellis, Denver, Colo.; R. L. Fielder, San Francisco; Arthur Goettsch, San Francisco; T. V. Hammond, San Francisco; J. E. Harvey, San Francisco; L. N. Hart, San Francisco; W. D. Horner, San Francisco; Frank A. Hughes, Venice; R. H. Hunt, Bartlett Springs; W. P. Keene, Los Angeles; L. C. Kimberlin, San Francisco; D. B. Kirby, Mare Island; H. P. Krummes, San Francisco; R. C. Lane, Los Angeles (Red Cross Hosp.); G. P. Lingenfelter, Denver, Colo.; J. C. Littel, Salt Lake City, Utah; T. F. Long, Denver, Colo.; E. M. Lindegaard, Oakland; T. R. McNabb, Los Angeles (Red Cross Hosp.); A. H. McNulty, San Francisco; J. E. Miller, Los Angeles; W. R. Leahy, San Leandro; H. L. Marshall, Salt Lake City; E. F. Milligan, Denver; A. J. Minaker, San Francisco; J. R. Moore, Los Angeles (Red Cross Hosp.); F. W. Muller, San Diego; B. J. O'Neill, San Diego; A. C. Reed, San Francisco; J. D. Reeng, Sacramento; R. C. Ryan, San Francisco; A. E. Schmidt, San Francisco; Daniel W. Sooy, San Francisco; O. B. Spalding, San Francisco; J. L. Swartz, Los Angeles; E. F. Stadtherr, San Jose; J. C. W. Taylor, San Francisco; H. H. Teter, Salt Lake City; R. W. Thomas, San Diego; H. A. Thompson, San Diego; A. B. Vogel, San Francisco; T. F. Wier, San Diego.

The Red Cross Naval Base Hospital No. 2 (Leland Stanford University Unit) has been organized and commissioned with the following personnel as officers:

Surgeon Stanley Stillman and Surgeon Emmet Rixford, Directors; Surgeon A. W. Hewlett and Surgeon Harold Hill, Medical Chiefs; Passed Asst. Surgeons J. F. Cowan and P. K. Gilman, Junior Surgeons; Passed Asst. Surgeon R. B. Tupper and Passed Asst. Surgeon W. W. Boardman, Junior Medical Officers; Passed Asst. Surgeon W. F. Schaller and Passed Asst. Surgeon T. J. Inman, Neurologists; Passed Asst. Surgeon A. B. McKee and Passed Asst. Surgeon Hans Barkan, Ophthalmologists; Assistant Surgeons Edmund Butler and L. O. Kimberlin, Assistant Surgeons; Assistant Surgeon H. L. Langnecker, Orthopedist; Assistant Surgeon G. D. Barnett, Laboratory; Assistant Surgeon W. E. Chamberlin, X-Ray; Dental Surgeon Frederick Wolfsohn, Dentist.

Surgeon John McMullen of the U. S. Public Health Service calls attention to the dangers of trachoma in recruits.

The history of European wars shows that trachoma has been a grave menace to the efficiency of the fighting forces, invaliding thousands of men and blinding large numbers of its victims.

Armies originally get trachoma from the infected civil population in the areas from which recruits are accepted, and give it back to the people, often with interest, when men are discharged who have served their enlistment or become incapacitated.

The eyelids of all soldiers and applicants for enlistment should in every instance be everted, the examination to include the retrotarsal fold, and the condition of the membranes noted in a space on the blank form reserved for this purpose.

An applicant who is found to be suffering from a well-marked trachoma should not be immediately rejected, but should be given treatment and his trachoma cured. He can then be again examined to determine whether he has resulting visual defects sufficient to cause his rejection. In this way a case of contagious disease will be eliminated and probably a good soldier gained.

The Council of National Defense states that letters have been sent to all the county committees, and special inquiries have been started through the State committees, medical section, Council of National Defense, in an effort to check up the number of medical men who have actually accepted commissions in the Medical Officers' Reserve Corps, and the reasons why commissions offered to others have not yet been accepted. Records indicate that something like 11,000 commissions have been offered and that only approximately 5,000 have been accepted. Various general reasons why more commissions have not been accepted are known, but there doubtless exist in different sections of the country special difficulties which could be overcome, and the section is making an effort to determine the exact status of the matter.

Plans for hospitals for all of the 16 cantonments have been completed by the office of the Surgeon General, and the work will be commenced by the cantonment division of the Quartermaster's Department and rushed to completion before troops are called under the selective service law.

All cantonments will have complete hospital facilities so that any of the 40,000 troops to be stationed in each cantonment can receive at once the best medical care. The hospital will have, with few variations, 34 wards, including two isolation wards. Separate barracks are to be provided for hospital internes and other employees, and special buildings for the administrative offices, power station, operating rooms, kitchen and dining-room, chapel, and other hospital needs.

The Quartermaster General's Department has sent out telegrams to presidents of 58 hotel associations throughout the country requesting the "loan" of 3,840 experienced cooks to superintend the kitchens in the 16 cantonments for the new National Army. For this work 15 civilian cooks will be required for each regiment to be formed, making an average of 240 for each cantonment.

The Quartermaster General has been authorized to organize 16 schools for the instruction of cooks for the army. The plan is to have a school for each National Army cantonment on September 1, when the mobilization takes place. The cooks for the organization of the National Army will be appointed after the army is organized. Therefore, preparation must be made for feeding the men when they are assembled at the cantonments.

There are at present four Government schools for the training of cooks and bakers. It is obvious that, in preparing to feed the new National Army, a much more extensive training must be devised. With this in view, the War Department has

worked out a plan whereby the captain of each company shall choose, out of the most likely men presented, three cooks who will be trained in school methods while the National Army is undergoing its course. This will give something like 675 enlisted cooks to each cantonment. Over these men the civilian hotel cooks will have supervision until the work is well organized.

According to "The Survey" (Aug. 4, 1917, p. 406), at least 24,000 of the 90,000 physicians of military age in the United States, Alaska, Honolulu and Porto Rico will be needed for war service, according to official announcement from Washington. Of the doctors between the ages of 22 and 55 fully 12,000 must be enrolled by October 1st, to go into camp with the new draft army and regulars.

Training camps for medical officers have been established at Fort Riley, Kansas; Fort Benjamin Harrison, Indiana, and Fort Oglethorpe, Georgia, with a capacity of 1000 student medical officers and 1800 enlisted men. Also at each camp four ambulance companies, four field hospitals and one evacuation hospital will train. At Fort Des Moines, Iowa, a smaller training camp for colored medical officers attending colored troops has been established. This camp has 550 officers and enlisted men in training. For ambulance service, a camp for 4500 officers and men is in operation in Allentown, Pa.

Training courses for medical officers last three months. In the first month they are taught the duties of enlisted men, in order that they in turn may teach. The second month covers the theory of officers' duties, and the third month their practical application in the field. Following the basic course, classes for specially qualified medical officers are given and more complete preparation for some special service, as for example, sanitary and military hygiene, or radiography, or laboratory technique.

The following-named officers of the Medical Reserve Corps are assigned to active duty and will report in person to the commanding general, Western Department, for duty; Maj. Herbert C. Moffitt, Capts. Gilbert M. Barrett, Gustav J. Bergener, and William R. P. Clark, and First Lieuts. Michel H. Etcheverry, Herman Verplank Hoffman, and George R. Hubbell.

NOTICE.

"Miscellaneous Nostrums," new third edition, is off the press and can be obtained from the American Medical Association, 535 North Dearborn Street, Chicago, Illinois, for fifty cents.

State Board of Health

AUGUST MEETING.

The State Board of Health met in Sacramento at 8:30 a. m., Saturday, August 4, 1917. Dr. George E. Ebright, president, was in the chair. The other members present were Drs. Fred F. Gundrum, Edward F. Glaser, Adelaide Brown, Robert A. Peers, and Wilbur A. Sawyer.

A special committee on appointments reported that the persons listed below had been appointed under Civil Service to the positions named. The report was adopted. The eligible list for the positions of State District Health Officer and Director of the Bureau of Communicable Diseases had been prepared by the United States Public Health Service on the basis of a nation-wide competitive examination.

Dr. Wilfred H. Kellogg, Director of the Bureau of Communicable Diseases.

Dr. E. D. Ward, Health Officer of the South Coast District.

Mr. R. N. Hoyt, Health Officer of the Middle Coast District.

Dr. A. F. Gillihan, Health Officer of the North Coast District.

Mr. E. A. Ingham, Health Officer of the Southern District.

Dr. R. W. Nauss, Health Officer of the Central District.

Mr. Harold F. Gray, Health Officer of the Northern District.

Miss Ida M. Stevens, Bacteriologist of the Southern Division Laboratory of the Bureau of Communicable Diseases.

No one passed in the examination for epidemiologist.

Dr. Karl F. Meyer of the Hooper Foundation for Medical Research was appointed Consulting Bacteriologist, without salary from the Board.

Permits were issued to three cold storage warehouses on the recommendation of the Director of the Bureau of Foods and Drugs.

On recommendation of the Director of the Bureau of Sanitary Engineering, temporary permits were given to the Bear Gulch Water Company to furnish water to Menlo Park and Woodside, and to the Black Diamond Water Company to furnish water to the City of Pittsburg.

Rules were adopted for the enforcement of the new milk law, Chapter 576, Statutes of 1917.

Certificates as registered nurse were granted to two nurses.

The secretary and attorney were instructed to take steps to secure a proper sewage system for all liquid wastes at the army cantonment at Menlo Park.

Miss Edna D. Porter appeared before the Board to show cause why she should not be prosecuted for representing herself to be a registered nurse in violation of the nurses Registration Act. After considering the evidence presented at the hearing, the Board referred the case to the District Attorney of San Francisco for prosecution.

Mr. Kemper B. Campbell, attorney for the Board, announced that the Supreme Court of California had denied a petition for a rehearing in the case of Boss vs. Lewis. This decision was the final step establishing the right of the State to compel counties to pay fees to local registrars of vital statistics.

Hearings were held in the food and drug cases set for this date and many of the alleged violations of the pure food and drug laws were referred to District Attorneys for prosecutions.

WILBUR A. SAWYER, Secretary.

HEALTH OFFICERS.

Typhoid prevention and control is most important at this season of the year. The State Board of Health has for free distribution, special bulletins pertaining to sewage disposal for isolated residences, sewage disposal for rural schools, rural sanitation, sanitation in the mountains, and fly eradication. Please indicate the number of publications upon each subject that you desire, and a supply will be forwarded immediately. Cards of instructions to persons having either syphilis or gonorrhea are also available, as well as posters regarding venereal diseases for placing in lavatories, etc.

DEPARTMENT OF PHARMACY AND CHEMISTRY.

Edited by FRED I. LACKENBACH.

ANTIBODY FORMATION BY THE INJECTION OF KILLED BACTERIA.

When bacteria find their way into the animal organism and begin to multiply, the first resistance they encounter is an increased leucocytosis or gathering of the white blood corpuscles at the site of infection. That one of the properties of leucocytes, and even some of the fixed cells of the body, is to ingest bacteria was demonstrated by Metchnikoff in 1883. He considered this the main and probably the only defensive agency of the body for resisting disease. This process of bacterial ingestion he named Phagocytosis from the Greek Phagein, to eat, and Kutos, cell.

It was, however, soon shown by innumerable investigators that phagocytosis is only one of a number of defense processes brought out by the animal organism in the presence of disease-producing bacteria. In fact, phagocytosis itself was found by Wright to be, to a great extent, dependent upon the preparation of the bacteria for ingestion and digestion by certain antibodies which he called opsonins.

In addition to increased phagocytosis, the cells composing the tissues attacked—under favorable conditions—begin to manufacture substances which have the power to kill the disease germs and neutralize their toxins. These substances are called antibodies.

A battle royal goes on between the bacteria and their toxins on the one hand and the phagocytes and antibodies on the other. If the phagocytes and antibodies win the patient recovers; if the bacteria and their toxins win, the patient dies.

Antibodies are cell-secreted ferments and there are at least five varieties of them, i. e.:

1. Bacteriocidins, which kill bacteria.
2. Bacteriolysins, which dissolve bacteria.
3. Agglutinins, which clump bacteria and render them inactive.
4. Opsonins, which prepare bacteria for ingestion and digestion by leucocytes.
5. Antitoxins, which neutralize the poisonous substances produced by bacteria.

Following up Metchnikoff's phagocytic theory, Wright demonstrated that the function of the antibodies called opsonins is to prepare bacteria for ingestion and digestion by the leucocytes. The name opsonin is from the Greek word opsono meaning, I prepare food for.

According to the opsonic theory of immunity, there are normally in the blood opsonins for a large variety of disease-producing bacteria. When a germ invasion takes place, tissue cells, if they are not crippled by the virulence of the organism, will immediately produce a large amount of antibodies including opsonins. In the meantime the leucocytes or phagocytic corpuscles of the blood rush to the site of invasion to repel the bacteria by ingesting and digesting them, or in other words eat them up. This the phagocytes cannot do until the bacteria have been prepared by the opsonins.

Thus, we see that immunity to disease germs is produced in the healthy animal body by the action of the disease germs themselves which have the power of stimulating tissue cells to produce antibodies. Some of these antibodies destroy the bacteria or render them inactive and others aid the phagocytes to ingest them.

The reason such cell activities in antibody production do not always follow germ invasion, is due to the activities of the germ in the involved tissues. If the germs are very virulent, are capable of secreting active ferments which adequately digest the food on which they live, these activities of the germs have such a harmful influence on the vitality of the tissue cells that antibody formation is delayed or inhibited, thus allowing the germs to continue their ravages without hindrance, resulting in tissue destruction, pus formation or death. Antibody formation under such conditions is evidently developed at the periphery of the infected area; in tissues that are influenced by the infection but not too intensely involved. Here is where bacterial vaccines come to the rescue. By injecting killed organisms into healthy tissues, similar tissue cell activities for antibody production are aroused as when a germ of comparatively low virulence gains possession of the body. These antibodies then opsonize, agglutinate or otherwise influence the living organisms in the infected area and cause their destruction.

It is now well understood that many of the early failures in antibody production from the use of vaccines were due to the use of vaccines composed of but one variety of a certain species of germs, the vaccines not being polyvalent. We find that the immunizing power from a bacterial vaccine, composed of selected vigorous organisms of as many varieties of a given bacterial species as possible, possesses higher immuno-producing properties (antigens) than single organisms vaccines.—(From The Bacterial Therapist, July, 1917.)

NEW MEMBERS.

Miller, Byron Y., San Luis Obispo.
Powers, Allan Raymond, Tracy.
Day, Emery C., Laguna Beach, Orange Co., Cal.

OBITUARY.

Russell D. Adams, M. D., Monrovia, Calif.; Long Island College Hospital, Brooklyn, 1864; aged 76; for more than thirty years a resident of California; died at his home, June 11.

Peter Gregory Cotter, M. D., Los Angeles; Albany Medical College, 1867; aged 60; a Fellow of the American Medical Association; died at his home, June 16.

Daniel W. Humfreville, M. D., Los Angeles: Medical College of Ohio, 1864; aged 74; died at his home, June 23.

William Scott Keys, M. D., Los Angeles; Vanderbilt University, Nashville, 1909; aged 30; formerly a Fellow of the American Medical Association; died at his home, June 20, from heart disease.

Charles Guy Reily, M. D., Los Angeles; Missouri Medical College, St. Louis, 1883; aged 58; a specialist in diseases of the eye, ear and throat; died at his home, May 26.

Robinson, Benjamin Bodie. Died in Nevada.

Robert F. Wallace, M. D., Chula Vista, Calif.; University of Tennessee, Nashville, 1886; aged 58; formerly a Fellow of the American Medical Association and secretary of the Shasta County Medical Society, at one time member of the board of health of Redding, Calif.; died in San Francisco, June 24, from injuries received in a streetcar accident ten days before.

James Walton Wood, M. D., Long Beach, Calif.; College of Physicians and Surgeons, Chicago, 1883; aged 61; formerly a Fellow of the American Medical Association; health officer of Long Beach from 1887 to 1898; a member of the local school board for nine years; director of the National Bank of Long Beach, and local surgeon of the Southern Pacific, Salt Lake and Pacific Electric railways; died at his home, July 5.

California State Journal of Medicine

OWNED AND PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA

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Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XV OCTOBER, 1917 Number 10

At a meeting of the Council of the State Society on August 25, 1917, the resignation of Dr. Sol. Hyman, as editor of the Journal, was accepted. Dr. Alfred C. Reed was elected editor. Dr. J. Henry Barbat, president of the State Society, has reappointed Dr. Sol. Hyman a member of the Publication Committee.

THE CHALLENGING OBLIGATION.

Not to be blamed but pitied! Not to be despised but compassionated! Who can say whether ignorance or fear was his enemy?—or both, for they are so often joined. Perchance his deaf ear had not heard the ringing appeal for justice, liberty, international law and democracy. Perchance his blind eye had not observed the agonizing plight of Europe's helpless. And so, perchance, his sluggish brain had not conceived the idea that to his own door would stalk the fate of Europe, did he not rouse his ear, and eye and brain to look on facts as facts. For he was indifferent to the appeal, tried to avoid the direct issue, sought to evade the crisis.

He claimed to be a conscientious objector, as if that justified his conscienceless refusal to help the helpless, and to help make war an anachronism. Or he claimed his religion forbade him to fight. Strange his same religion should not forbid Europe's million children to suffer and die. Or he claimed his philosophy of life was too advanced and high to permit him to do this thing. Or he claimed he did not believe in war. Or he claimed some technical trumpery which should win him exemption and did not see that he gained exemption from honor, and obligation, and self-respect, and the regard of his fellow men. He claimed,—all these and more, when ignorance and fear, twin sisters of disaster, dwelt in his soul, and he would translate their whisperings into a conscience. He claimed,—what did he not claim? And in the white crucible of national peril and national challenge, his philosophy of life failed ignominiously, could not stand the test of just war's acid. He failed in the crisis; and he is to be pitied,—not blamed, compassionated,—not despised.

Fortunately he is not to any extent in the profession of medicine. Fortunately the doctor has girt himself with his old-time principles and his historic character of seeking whom he might save. Let there be no slacker. We dare have no slacker in *this* profession. It must lead and hold up the torch. *Our* philosophy has not failed and will not fail in this, civilization's greatest crisis in history. The challenging obligation of service comes to-day to the medical profession with the authority of an insistent demand. One out of five of us must go to the army. The rest of us, if our loyal support is tendered, will allow no consideration of personal advantage or gain to hinder the one ideal now uppermost. This war must be won. To that end let every doctor do his bit, whether at home or at the front.

"The basis of this demand is not patriotism in general, or militarism in any degree, but the very justice of the national cause, the supreme

importance of the issues at stake. Truth needs now not apologists, but defenders. Humanity needs not lip confessors, but champions. Civilization needs not expounders, but exponents. Internationalism needs practical builders who know the precise lay of the national foundations. The peace-makers who shall be called the children of God are none other than the stern, unsentimental, stout-hearted fighting men who now strive with might and main to build a lasting international peace, who are the exponents of civilization where it is threatened, the champions of humanity, the defenders of truth." [1]

THE MAINTENANCE OF INDEMNITY DEFENSE FUND.

The initial assessment for the organization of the Indemnity Defense Fund was fixed at $30.00, one-half to be paid in cash upon subscription, and the balance by note due one year thereafter. In fairness to those who joined the Fund promptly, it was necessary to fix a limit upon this method of payment, and therefore December 31, 1917, was settled upon as the last maturity date for notes covering the deferred payment. In other words, a member joining the Fund at any time subsequent to January 1, 1917, paid $15.00 in cash and the maturity date of the note given by him was December 31, 1917, no matter at what date he came in, and, of course, this rule obtains for all members joining at any time up to December 31, 1917.

Commencing January 1, 1918, the Council has decided that the full initial assessment of $30.00 be paid in cash. This ruling is, of course, dictated by the interests of those who have been prompt in becoming Contributing Members.

Despite what has been said and written upon the subject we are still in receipt of many inquiries on the subject of assessments, and particularly as to whether or not these assessments will be levied regularly each year. This is not the intention, nor the design of the Fund. The amount of the assessments and the frequency with which they will be levied depends entirely upon the successful assertion of claims against the Contributing Members. Taking as a standard the experience of our Legal Department for the past eight years it may be conservatively said that these assessments should not in any event exceed $10.00 per annum, and the greater the number of our members who join the Fund, the lower will be the amount of these assessments. We do not mean to give the idea that there will necessarily be an assessment of $10.00 each year. It may not be necessary to levy any assesment, and we trust it will not, for at least two or three years. The idea we are seeking to convey is that assessments will only be levied as necessity for replenishing the Fund arises, and that the experience we have had shows that an assessment of $10.00 per annum would be the maximum figure.

It must be borne in mind, however, that in considering propositions of this character the law of averages plays a large part. Therefore, it is extremely desirable that as large a membership as possible be obtained for the Fund.

It is so patently to the interest of each member of the Society to join the Fund that it seems ridiculous to do so much talking about it. Members accused of malpractice always turn to the Society for protection, advice and comfort. Our records show that the organization has never failed them, but the ordinary legal defense does not protect against adverse final judgments. A member insured in a private company nevertheless looks to the Society first. If he were a Contributing Member he would secure the active co-operation and assistance of our Legal Department as well as that of his insurance company. If he be not insured, it is certainly to his interest to secure the protection afforded by the Fund.

There is nothing technical, involved, or complicated in the organization of the Indemnity Defense Fund. The Coverage Rules are a plain statement of the fundamental principles necessitated for the protection of the individual and the entire organization. The regulations governing the administration of the Fund are based upon fundamentals used by all trust companies, and the board of trustees handling the Fund is composed of men whose judgment in matters of finance is most sound and conservative.

Ask your County Secretary about the Fund, or write to the Secretary of the Society.

THE ALCOHOL QUESTION.

IV. ECONOMIC CONSIDERATION.

From the economic point of view, is the use of alcoholic beverages an asset or a debit? Does alcohol have any influence on the economic condition of the employer or of the employee? Two methods of approach are available in this consideration. In the first method, data have already been presented in this series [1] showing the physiological action of alcohol and its deleterious influence on public and private health. It is unnecessary here to repeat these statements, or others to the same intent. They are demonstrable and must be accepted. The action of alcohol thus described leads certainly to definite economic results. These results appear in a variety of forms. Among them may be noted increase of industrial accidents, interference with efficiency and productivity, increase of sickness, loss of wages, unemployment, contribution to the maintenance of the vicious circle of poverty, crime, vice and alcoholism. These are matters of very pertinent economic concern, and to ignore them does not remove them.

The second method of consideration is from the standpoint of productive business, concerned at its best with three things, return on invested capital, a living wage for labor, and efficient service to the clientele served. In a paper before the National Conference of Charities and Corrections in Indianapolis, Alexander Fleisher [2] discusses the attitude of large employers toward the use of

1 Survey, Aug. 18, 1917.

1 Cal. State J. Med., 1917, XV, July, Aug., Sept. Edits.

2 Mo. Bull. N. Y. C. Dep't of Health, 1916, VI, 159.

alcohol by employees. He notes that only two preceding reports are available in this field. The first of these was a chapter in the twelfth annual report of the Commissioner of Labor for the year 1897-8 on the economic aspects of the liquor problem. Of 6976 employers of about one and three-fourths millions of people, 5363 reported the use of alcohol was considered in the engagement of new employees. In some of these establishments, no user of alcoholic beverages was employed. Out of 1794 plants, for the sake of prevention of accidents and because of responsibility of the position, alcohol was barred. Of 7025 firms, 3527 had some regulation regarding alcohol: 855 forbade its use in working hours: 696 forbade its use at any time: 692 that in certain occupations its use was forbidden on duty, and in certain occupations 1,284 forbade its use at any time.

The second study noted by Fleisher was made within the year by the Temperance Society of the Episcopal Church, among the iron and steel companies of Ohio, Pennsylvania, Illinois and West Virginia. The data covered 140 companies, many with more than one plant. Of the 120 companies answering, 83 discriminated against the use of alcohol in employing and promoting employees, and ten forbade its use by employees at any time. The first study was conducted twenty years ago and the second covered a section of one industry only.

Fleisher received data from ten railroads employing a total of 400,000 men, all of which regulate the use of alcohol in some fashion, and typically according to this notice: "The use of intoxicants by employees subject to call is prohibited. Their use by any employee or the frequenting of places where they are sold, is sufficient cause for dismissal." It is interesting here to note that the Saxon State Railways have instructed their officials to employ only non-drinkers. Swiss and Dutch railways are following in the same path. Says the Railroad Gazette, "American railroads have become one of the greatest and most effective temperance organizations in existence." Six public service corporations employing a total of 200,000 men seemed not to have taken the matter up for definite pronouncement but the conclusion is drawn that intoxication on duty would meet with dismissal, that use of alcohol is forbidden in working hours, and that if its use interferes with the duties of an employee he would be dismissed.

Returns from large department stores, retail stores and mail order houses employing in all some 44,000 persons, show that in general drinkers are not allowed to remain in their employ. So the list goes on through the employees of sales organizations, steel companies, mining companies, manufacturers of various products, and a miscellaneous group of minor industries. Fleisher summarizes his results of the investigation of the employers of 750,000 persons, constituting 4 per cent. of those engaged in trade, transportation, and the mechanical and manufacturing industries of the United States, by stating that these employers forbid alcohol in their plants, often consider its use at all as of serious importance in the employment and promotion of employees, and that in such industries as transportation, alcohol is forbidden to employees at any time. This latter stand is being approached by other lines of industry.

Fleisher further points out that this great trend against the use of alcohol is a result, not of any knowledge of its physiological action or of statistics as to its use, but simply of the fact that the non-drinker is found to be the best employee. Space forbids mention of the increasing number of trade organizations both among employers and employees which are opposed to the use of alcohol, on the basis of its proved results from the economic standpoint.

An exhaustive discussion is not possible because of space limits. The importance of the subject, however, merits profound thought from every physician as to the actual conditions obtaining in the economic realm as affected by alcohol. Nor should undue weight be put on the alleged freedom of the individual to select whatever narcotic he desires. When that selection leads to conflict with public and private health interests, to interference with full war efficiency, to economic damage to the country, and to the whole train of post-alcoholic evils which are at last being correctly evaluated, it should no more be permitted than should the freedom of the individual to debauch himself with cocaine. Of the two, alcohol bulks larger and the remedy should be at least as sweeping.

NEW MEDICAL PRACTICE LAW.

The new amendments to the state medical practice law went into effect on July 27, 1917. Two provisions require special comment. The first is relative to the employment of interpreters or translators for candidates for medical examination. The law provides that "the board (of medical examiners) in its discretion upon the submission of satisfactory proof from the applicant that he is unable to meet the requirements of the examination in the English language, may allow the use of an interpreter either to be present in the examination room or to thereafter interpret and transcribe the answers of the applicant." The interpreter is to be selected by the board.

In another column are published the rules adopted by the board under this provision. These rules would seem adequately to cover the situation, granting, of course, that the use of interpreters is desirable under any circumstances, of which we are by no means convinced.

The second provision requiring comment is in connection with Section 12½ of the amendments appertaining to the licensing of osteopaths as "physicians and surgeons," provided they meet certain preliminary requirements, or have practiced their profession for at least four years, and pass an examination which may be "oral, practical or clinical." The important word is the "or." It is not known to us why the law does not provide for an examination which should be "oral, practical *and* clinical." The result as it stands, is that a purely

perfunctory oral examination may be sufficient to secure a physicians' and surgeons' license for osteopaths who are otherwise eligible.

The first examination of osteopaths under this new provision will be held in Los Angeles early in October. The medical profession of the state will be keenly interested to see what type of examination is given and whether the Board of Medical Examiners allows the language of the law as heretofore stated to prove a loop-hole. The JOURNAL will publish the results of the examination and other information concerning it as it is realized that this is of no small interest and importance to the medical profession of the entire state. The Board of Medical Examiners is commissioned with the onerous and responsible duty of maintaining and promoting the standard of medical practice in the state. To that end they have the cordial interest and should merit the constant support of the medical profession. It is to be hoped that this coming examination will set another high standard, and will establish a clear policy of adequate and thorough examination. We shall have more to say at a later time regarding the character of efficient medical examinations.

ACCEPTANCE OF ORIGINAL ARTICLES.

All papers read before the State Society are the property of the State Medical Journal, unless by action of the Publication Committee they are not found available for publication. The Publication Committee may reject any paper submitted, whether it be from a State Society meeting, a county society meeting, or written solely for publication. The editor may accept any paper he sees fit but can not reject, this latter being a function of the Committee. It is greatly to be hoped that no paper will be allowed to be presented at the State Society meeting at Del Monte next April, unless the original copy of it is already in the hands of the secretary of the section before which it is read. Many state papers from the last meeting have not yet been submitted for publication. No special effort will be made this year to gather in the missing papers because of the unduly crowded space in the JOURNAL. In this connection, it is hoped that the larger size of the JOURNAL may be continued long enough to relieve the congestion and eventually become permanent.

In another column will be found a notice from the Committee on Scientific Work making certain suggestions for the preparation of papers for the next annual meeting. These suggestions are good and timely, and the Committee will do well to present the matter again and at more length. The same suggestions to a certain extent are applicable to all papers presented for publication in the JOURNAL. While it is not the policy of the Publication Committee to make the JOURNAL ultra-scientific, or to insist on a preference for research and new results in manuscripts submitted, still it is felt that the JOURNAL space is too valuable to be devoted to mere text book descriptions which can be better read in a standard volume.

Papers should be condensed by leaving out every word, phrase and paragraph which does not contribute constructively to the argument developed. Every sentence must be clear and express a definite idea. Spelling and punctuation must receive proper attention. Typing, margins, double spacing, paragraphing,—all must be clear and carefully worked over before submitting. The cardinal sin of the medical writer is verbosity. Avoid it. Many excellent papers have been returned for slight alteration or modification which would considerably enhance their value and would insure their acceptance for publication. All references should be numbered serially through the paper, and give only,—author, journal, year, volume, page. Above all, the medical writer should clothe his argument, as Thomas Hobbes advised, in "perspicuous words by exact definition first purged and snuffed from ambiguity."

The scope of papers accepted is broad and is designed to furnish practical instruction to the general practitioner, especially in smaller towns, as well as to men specializing in cities.

THE UNHYGIENIC COLON.

The physiological and bacteriological storms which have raged of late years about the colon would of themselves give importance to that organ even if the first reflection did not show conclusively that there is some occasion for regarding it as Kellogg, in the preface of his book on "Colon Hygiene," says: "An incubating chamber of poison forming germs, a hold of unclean and hateful parasites, a veritable Pandora's box of disease and degeneracy." From absolute ablation as a panacea, to a complete disregard of the organ unless it shall not have emptied itself in a week or more, there is a whole range of phenomena which may appear as symptoms and of remedial agents which may be used with effective results.

It is worth while for the physician to remember that the colon is not unhygienic merely because of the presence of bacteria. It is becoming known that processes of digestion depend, to an as yet unknown degree, on the action of bacterial enzymes directly on foods. Metchnikoff's endeavor to replace the abnormal bacterial inhabitants of the colon with beneficent organisms is in line with the present trend of investigation.

But while bacteria are a necessary factor in the physiology of the colon, they are also the cause of abnormal conditions through products which may cause, or predispose to disease. Here is the place filled with fads and fancies, some scientific and more pure fancy. All of the internal baths, and colon irrigators on the market today but voice this truth. A half assimilated idea is often worse than none at all, and a pseudo-scientific sensational exploitation of the idea that the colon must be cleansed at any cost, and that this can actually be done, is usually an accompaniment simply of a commercial desire to trade on the authority of science for money making purposes.

There is a legitimate field for colon hygiene, however, and this too must not be forgotten by the practitioner. Kellogg discusses in general from a

rational standpoint what is a proper care of the colon and how to regulate its activities by the use of diet and enema. Constipation is not the source of all human ills, although a great many do seem to have their origin there. It behooves us, therefore, to follow the old maxim of Horace, a wise guide by the way, in all therapeutic procedure. "Not too far out to sea, Licinius, nor yet too near the shore." There is a safe and middle course, and in the hygiene and treatment of the colon such is the course of choice. Even Kellogg is prone to exalt the colon above all other gods as a *fons et origo* of disease, but withal he has some sane and practical ideas which are worthy of commendation.

MALARIA IN RICE FIELDS.

Serious attention of the medical profession, particularly those who reside in the San Joaquin and Sacramento Valleys, is called to the article of Mr. Freeborn in this issue of the JOURNAL on "The Malaria Problem in the Rice Fields." Mr. Freeborn's active association with Professor Herms of the University of California, to whose earnest efforts extended over many years, the present interest in malaria in California may be considered due, and Mr. Freeborn's participation in the general mosquito survey of the California State Board of Health during the past summer makes him peculiarly well fitted to write this most interesting article.

The importance of the relation of malaria to agriculture, particularly rice-growing, is impossible to estimate. Likewise the damage malaria can do with its presence among the agricultural neighborhoods cannot be estimated. The dissemination of information as to the prophylaxis of malaria by Professor Herms, Mr. Freeborn and the California State Board of Health means a great deal to the rice-growing communities because malaria can be made a negligible factor with relatively small cost.

The work of Kelly and Geiger on the determination of the malarial endemic index in certain communities in California, a work not finished, has yielded most interesting data. Organization of efforts in other communities and lands with a compilation of the comparative results obtained makes plain the following facts:

First—Malaria is the result of an animal parasite, easily demonstrable in and capable of reproduction in the blood of the host.

Second—Malaria is transmitted by certain species of the anopholes mosquitoes.

Third—Quinine properly used will cure cases of malaria.

Fourth—Quinine in small amounts, such as five grains, used daily during and after exposure will prevent malaria.

This last measure should be employed because of the experience of the Italian government in its efforts to control malaria. The good results obtained, notwithstanding intensive mosquito control, being due to quinine prophylaxis.

EDITORIAL COMMENT.

Under the heading of Notices there appears in this issue a list of the A. M. A. publications concerning nostrums and quackery. The list includes much spicy reading and much that is disgraceful to any modern civilized country. The mere repetition of it all is nauseous, yet the public, including the doctors, must know what is going on, and without publication, this cannot be. Therefore the publication. No other reason would justify it. And still in spite of the publication of these and similar exposés, the newspapers of California reek of nostrums, many of them of proved worthlessness, and smell to high heaven with the stench of abortionists, and beauty doctors (save the name!) and quacks of the most brazen sort. If the people really want such muck, are they entitled to get it? And again, do they want it? Would it pay to have a California newspaper free from such advertising? Would it be good business for commercial bodies to purge the press at least in part of such advertisements? Would there be any possible effect on strangers and prospective tourists and investors? We think there would. Think it over, and decide if such be the case, why the physicians of each town and city should not take the lead in purifying the public press of the state of nostrum, quack, charlatan and plain abortionist advertising.

In connection with the preceding paragraph, the following circumstance gives further food for thought. Recently in one of the supposed best drug stores in San Francisco, was to be had gratis a small pamphlet entitled "Dr. Humphrey's Manual," whereby the enterprising reader was informed that he could diagnose and treat most of his own ailments with complete satisfaction to Dr. Humphrey. In this small volume is a complete epitome of medical art and practice. No longer suffer from stomach-ache but take some of number 23 and be cured! If you are a victim of "Glycosuria Albuminuria" with "a red fissured tongue and enlarged papilla, voracious appetite and sinking of the stomach," take "a Special, in fluid, with directions," for one dollar per bottle. It is a wonderful new system of home-dosed therapeutics, where instead of calling on the doctor, it is only necessary to call off a football signal, such as 27, 31, 19, 11, and presto! the disease is treated and cured. Or perhaps, it is like a game of craps, and the fall of the dice tells the combination required for treatment. What are we to think of the drug stores which promote such advertising? Are there any drug stores which do not, at least to some extent, distribute cheap medical literature, so-called, for the purpose of increasing sales of nostrums and patent medicines, by means of stimulating amateur diagnosis? The home diagnosis and treatment of disease is among the oldest and newest of indoor sports and by it the undertaker thrives and the nostrum-monger waxes fat and opulent. Of all this more, much more, anon.

The open season for typhoid has not closed. But it is to be remembered that typhoid can be prevented, and that every case of it means simply ignorance either on the part of the patient or

often of his physician. In neither case, at least in California, is such ignorance excusable. The sure means of prevention is known. The victim of typhoid, therefore, does not deserve sympathy and should never receive monetary compensation. He is always merely the victim of some one's carelessness or ignorance. The bill should be assessed against that person who was culpably careless or ignorant. The State Board of Health will supply typhoid vaccine to any physician free on application. Why not take advantage of the offer? Ignorance and dirty fingers are at the root of most cases of typhoid. How easy to remedy these, and to use the known specific protection.

We want news. If you have no county editor as yet, elect him at once. The collection of news depends on the various county editors primarily. We want especially matters of professional interest, such as details of new hospitals, new equipment and clinical features of hospitals and institutions, matters of public health interest, and all from country districts as well as from cities. We want jokes,—of a medical nature especially, clippings from the medical and lay press which may amuse a weary brother in need of refreshment, and any items of local interest or from local publications which might be of interest to other doctors. Also we want letters of criticism, disagreement, advice, and any other matter which is disturbing a medical mind. The columns of the JOURNAL are open to any communication which the legal counsel for the society will pass. It is your JOURNAL. It is up to you to make it interesting.

Attention is directed to a letter under the head of "Correspondence," from the advertising committee of the JOURNAL, relative to the automobile coupon which is published again this month in the advertising section. The matter is one of importance because by this simple means, i. e., by filling out and mailing the coupon, each doctor can be of material service in the business administration of the JOURNAL. It is not a time-consuming operation to mail the coupon. Please do so at once, and let us have this as another instance of general support of the interests of the JOURNAL.

Do not miss the jokes in the advertising pages.

SPECIAL ARTICLES

THE BASIS FOR MEDICAL EXAMINATION IN THE ARMY.

Perhaps it were well at this time, when the decision of rejection or acceptance of drafted men rests in the hands of civilian doctors, to shed some light on what the physical requirements of examination of recruits for service in the army really are.

It is much to be desired that the Exemption Board exercise the same care in the selection from the drafted material as would the recruiting officer in the service. Noticeably physical defects eliminating the man as a candidate are readily discernable. Amongst these might be classed:

Impediment in speech; stabismus, convergent or divergent; loss of eye; total loss of either thumb; entire loss of any finger except the little finger; prominent flexion of one or more fingers; adherent or united fingers; lack of freedom in movement of joints; deviation from prescribed standard of physical proportions; scars of hideous disfiguring proportions; defective teeth; loss of ear; a loss of material of the ear, causing disfigurement; purulent otitis or diseases of the mastoid cells; a deviation of the septum of the nose or any contraction of the nasal orifice interfering with respiration; a lack of legal, moral or intellectual qualifications.

In the visual examination, which is to be made before the physical examination of other organs—as it is here that the greater number of disqualifications are found—a few of the excluding conditions might be noted: Complete or exclusive destruction of the lids; marked inversion or eversion on lids; ptosis; trichiasis; chronic conjunctivitis; trachoma; chronic keratitis; deep ulcers of the cornea; staphyloma; glaucoma; irregularities of the iris, and anterior or posterior synechiae reducing the visual acuity below the accepted standards. These are here given:

EYE TEST

Branch of Service	Right	Left
Line of Army	20/40 or some of 20/30	20/100
Signal Dept.	20/40	20/100
Medical Dept.	20/70 correctible to 20/40	Same as rgt.
Ordnance Dept.	20/70 correctible to 20/40	Same as rgt.
Medical Corps Medical Officers' Reserve Corps	20/100 correctible to 20/20 No. 1 Jaeger 50 D Sn 13-20" No color blindness or strabismus	Same as rgt.

ORGANIC DISEASE MUST BE EXCLUDED IN ALL CASES.

Following the visual examination the physician has the candidate strip, and here are noted the existence of evidence of drug habit; previous venereal diseases; pronounced hernia; obscene tattooing; marked deviations of the true spinal curvature; varicose veins; corns; bunions; hammer toes; interfering with locomotion; flat foot; where candidate is unable to stand the test of raising on the toe and qualifying, the hopping exercise; loss of the great toe or two toes on the same foot; hypospadias and epispadias disqualify.

Amongst the skin troubles are classed eczema; elephantiasis; chronic impetigo; extensive psoriasis; lupus and sycosis; extensive disfiguring naevi and other erectile tumors.

In the examination of the heart, marked hypertrophy and all valvular diseases; pronounced tachycardia and marked arrhythmia of the heart's action disqualify. Evidence of tuberculosis; chronic bronchitis; pulmonary emphysema; asthma; chronic pleurisy disbar. Chronic malarial poisoning marked

Height	Weight	Expiration	Mobility	Min Weight	Service	Min. Height	Max. Height	Min. Weight	Max. Weight
61	110								
62	114								
63	118								
64	128	32	2	120	Infantry	64	—	120	190
65	130	32	2	122	Coast Aty.	64	—	120	190
66	132	32½	2	124	Engineers	64	—	120	190
67	134	33	2	126	Signal C.	64	—	120	190
68	141	33¼	2½	129	Q't'master	64	—	120	—
69	148	33½	2½	133	Cavalry	64	70	120	165
70	155	34	2½	135	Field Aty.	64	72	120	190
71	162	34¼	2½	142	Mtn. Bat'ry.	68	—	129	—
72	169	34¾	3	149	Aviation				
73	176	35¼	3	156					

Marked disproportion of weight over height is not a cause for rejection, unless applicant is positively obese.

by cachexia; grave anemia; syphilis; gonorrhea; chancroids, single and multiple; complete phimosis; chronic orchitis or epididymitis are disqualifying conditions; rupture through the scars or walls following abdominal operation; an extremely relaxed condition of the inguinal ring disbars.

To more easily understand the demands of the relative proportions of weight and height, the following table is given. A misunderstanding seems to exist with regard to the new ruling of the minimum weight permitted, i. e., 110 lbs. The table will readily set at rest all doubts with regard to the minimum weight permitted in the army:

Where doubt exists in cases of flat foot differentiation of the low arch, which is not a disqualifying trait, from the true flat foot, the decision may be reached by having the candidate stand on a talcum powder covered board and then step aside or walk across a clean area, which would show the true imprint of the foot.

By excluding drafted men possessed of one or more of these disqualifications much trouble would be saved and the unnecessary loss of time taken up in mobilization when the accepted man would undergo the Military Surgeon's inspection and examination and some overlooked disqualifying condition found. If such a state of affairs be accomplished as to mitigate this condition the object of this article will have been achieved.

RECRUITING OBSERVATIONS.*

By JAY JACOBS, M. D., San Francisco, and W. D. HORNER, M. D., San Francisco, Assistant Surgeons, U. S. Naval Reserve Force, Headquarters 12th Naval District, Sheldon Building, San Francisco.

The following observations are taken from the records of 3,460 men examined in San Francisco, California, for the United States Naval Reserve Force.

All of the applicants were subjected to the same physical examination regardless of rating or duties to be performed.

Of the above number, 833 or 24%, were rejected for various causes.

The percentage of rejections in this series is lower than the figures given by Gatewood in his "Naval Hygiene," who states that of 81,442 applicants examined during 1908, 29,910, or 36%, were rejected for physical disability. However, 26,242 more were rejected for causes other than declared physical disability, so the final percentage of rejections must be given as 67% or approximately two out of every three applicants in that series.

Contrary to the opinion of many people, physical requirements in the Navy have not been appreciably lowered since the outbreak of the war.

The various causes of rejection as we observed them, together with their percentages may be of interest to others and are submitted by the following table in their predominating order:

CAUSES OF REJECTION

Cause	Number	Percentage of total rejected	Percentage of total examined
Defective vision	215	25.8	6.2
Underweight	144	17.1	4.1
Systolic murmur heard over mitral area	81	9.7	2.3
Varicocele	58	6.75	1.7
Defective teeth	54	6.5	1.5
Color blindness	51	6.1	1.4
Flat feet	46	5.5	1.3
Diseased tonsils	34	4.0	.9
Tuberculosis lungs (suspect)	34	4.0	.9
Inguinal hernia	26	3.12	.7
Underheight	25	3.0	.7
Hydrocele	17	2.4	.4
Alcoholism	15	1.8	.4
Hemorrhoids (external)	12	1.4	.3
Defective hearing	12	1.4	.3
Neisser infection (acute)	11	1.0	.3
Varicose veins	11	1.0	.3
Ankylosed joints	8	.96	.2
Postoperative hernia	8	.96	.2
Undescended testicle	8	.96	.2
Impediment of speech	6	.70	.1
Arrhythmia heart	6	.70	.1
Atrophic testicles	5	.58	.1
Amputations	5	.58	.1
Mental aberration	4	.48	.1
Aortic heart murmur	3	.48	.08
Syphilis	3	.35	.08
Hypospadias	2	.35	.08
Tumor of testicle	2	.24	.05
Scoliosis	2	.24	.05
Obesity	2	.24	.05
Pleurisy	2	.24	.05
Otitis Media	2	.24	.05
Phimosis	2	.24	.05
General undesirability	2	.24	.05
Pulmonary heart murmur	1	.12	.02
Enteroptosis	1	.12	.02
Eczema	1	.12	.02
Venereal warts	1	.12	.02
Conjunctivitis chronic	1	.12	.02
Cirrhosis of liver	1	.12	.02
Psoriasis	1	.12	.02
Acne	1	.12	.02
Myocarditis	1	.12	.02
Epilepsy	1	.12	.02
Rectal fistula	1	.12	.02
Club foot	1	.12	.02
Obscene tatooing	1	.12	.02
Iritis	1	.12	.02
Strabismus	1	.12	.02

Where the applicant exhibited more than one

* By permission of the Department.

defect, that one most disqualifying from a Naval standpoint is listed.

Defective vision caused the highest percentage of rejections. The minimum allowed is 15/20 corrected by glasses to 20/20. The fraction 15/20 denotes that the applicant must stand 15 feet away from the chart in order to correctly read standard type normally seen at 20 feet.

Color blindness was present in 6% of the rejects, or 1.4% of all applicants. The latter figure is considerably lower than that obtained by Jeffries who examined 19,183 males and found 802 color blind, or 4.18%.[1]

A committee of the Ophthalmological Society of London examined 14,846 males and found 617, or 4.15%, color blind.[1]

Gatewood states that in three fiscal years between 1895 and 1906, out of 74,300 applicants examined for first enlistment, 3.2% were color blind.[1]

It is interesting to note that color blindness appeared in three brothers of one family and two in another in our series.

Care was taken not to condemn as color blind one who was only color ignorant. The applicant was given a colored skein to match rather than told to pick out shades of a certain named color.

As all the men were volunteers and anxious to enroll, simulation in eye examinations may be practically ruled out. By using various combinations of letters on the test chart, chances of a candidate having learned certain lines by rote were avoided.

Regarding heart murmurs, conscientious attempt was made to rule out the functional varieties. Many applicants found with heart murmurs were submitted to a subsequent examination for final decision. The history of diseased tonsils and previous rheumatic attacks could be elicited in many of the heart rejects.

Small varicoceles were not considered as cause for rejection. Only in cases where the varicocele approached the size of the testis were the applicants turned down. In all cases where the applicants were passed with varicocele, permission for subsequent surgical treatment if indicated, was obtained.

Many were rejected on account of insufficient teeth. The Navy regulations call for at least twenty sound teeth with four opposed molars and incisors respectively. Properly filled teeth are counted as sound.

The percentage of flat feet rejects was rather small. The method of gauging flat-footedness is as follows:

"The height of the arch is measured as the distance from a line drawn between (a) the lower border of the internal malleolus and (b) the lower tubercle on the head of the first metatarsal (Feiss line) to (c), the tubercle of the scaphoid, which distance should not exceed one-half inch. This measurement is relative and is simply a measurement of proportion in the average foot." Of course additional signs are looked for, such as attitude in standing and walking; distribution of weight as shown by applicant's shoes; contour of feet side by side with the two internal malleoli and metatarso-phalangeal joints touching; range of motion, especially adduction or inversion of foot, and history of pain or previous arch trouble.

Underweight and underheight were the causes of many rejections. The minimum height accepted in the Navy is 64 inches, with a corresponding weight of 128 pounds. In some cases where the deficiency was not too great and the applicant otherwise desirable, acceptance was gained by waiver. Those temporarily underweight were asked to appear for subsequent examination.

Of the cases listed as post-operative hernias, the great majority followed appendectomies.

Any case of appreciable change in breath sounds found in the lung examination was regarded as suspicious and either rejected as suspected tuberculosis or re-examined subsequently in case of an acute bronchitis.

Hemorrhoids were mostly of the external type and a cause of rejection only when large.

Impediment of speech consisted mainly of stuttering and this was considered sufficient cause for rejection. A stuttering "Jackie" is usually subjected to painful ridicule by his more fortunate shipmates.

Cardiac arrhythmias caused various rejections. In some cases this was attributed to overuse of tobacco, in others to pure nervousness. In none, was any thyroid enlargement found.

Applicants with undescended testicles were rejected on account of the possibility of future complications.

Among the five cases rejected for atrophic testicles, three gave as causes previous attacks of mumps.

No routine blood examination was done for syphilis. Those rejected showed unmistakable clinical signs.

1 Gatewood—Naval Hygiene, p. 707.

ORIGINAL ARTICLES

UROLOGICAL DIAGNOSIS IN GENERAL PRACTICE.*

By FRANK HINMAN, M. D., San Francisco, Cal.

The recognition at an early stage of almost any urological disease, whether in man, woman or child, and immediate institution of proper treatment would give a high percentage of complete cures; would prevent many chronic and hopeless complications, and would greatly lower mortality. Many urological conditions may be recognized without the need of any special procedure of examination. In the majority, however, particular methods are required before a diagnosis can be made. It is the purpose of this paper to call attention to the value of a properly performed routine urological examination on the part of the general practitioner, which will enable him not only to diagnose earlier those conditions possible of diagnosis by such an examination, but also to refer at an earlier date particular cases requiring a more complete urological study. The late recognition of many chronic genito-urinary ailments is

* Read October 2, 1916, before the Fresno County Medical Society, Fresno, Cal.

often, to be sure, the fault of the patient in not seeking medical advice. For example, stone may be present in the kidney for years, and the patient have no symptomatic knowledge of it; but when that patient finally consults a doctor for the pyuria that results and is then treated over a long period for a cystitis, who is to blame for the completely destroyed kidney? In case of bilateral silent stones there will result irreparable damage to both kidneys. The following case (Case I) is an example:

A young man at the age of 26 was told by his doctor that he had pus and blood in his urine. He is now 38. Pus has been continuously present in his urine for twelve years. He has seen, in these twelve years, many different doctors and has been variously treated. He has had dilute hydrochlorid acid for epigastric pain and bladder irrigations over prolonged periods for cystitis. He has never had renal colic or lumbar pains. Recently an X-ray examination, the only one he has ever had, showed enormous bilateral stone casts of large pyonephrotic kidneys. Had these stones been recognized when pus was first found in the urine, as they would, had the proper routine examination been made, twelve years of gradual destruction of both kidneys would have been saved.

For the purpose of the present consideration, the close anatomical and functional association of urinary and genital cases permit of one general preliminary examination to cover all cases. It is on the indications of such a preliminary study that more detailed investigations of either group are made. Such a routine should include a detailed urinary and genital history, urine examination, an examination of the external genitalia and, in the male, a rectal examination. The indication of a lesion of the upper urinary tract would then require additional procedures which would differ from that for a lesion of the lower urinary tract. Certain routines, for teaching purposes as well as to insure thoroughness, have been established in the University of California clinic. In the study of kidney cases renal X-ray and functional study are required as preliminary to the more special examination of cystoscopy, wax-tipped exploration, separate functional study, pyelography and so forth. Examination of cases with acute and chronic lesions of the lower urinary and genital tract also are followed in a routine way. These methods might be advantageously adapted in general practise and are as follows:

TECHNIC OF EXAMINATION IN ACUTE URETHRITIS.

I. Examination of External Genitalia.
II. Examination of Urethral Discharge. (Make very thin smear. Use Gram's Method.)
III. Examination of Urine:
  a. Three Glass Test.
  b. Young's Seven Glass Test when indicated. Note: No patient with profuse discharge is ever to be instrumented.

TECHNIC OF EXAMINATION IN CHRONIC INFECTIONS OF THE URINARY TRACT.

I. Examination of the External Genitalia.
II. Examination of Discharge, if any is present.
III. Examination of Urine:
  a. Three Glass Test.
  b Seven Glass Test.
IV. Rectal Examination.
  a. Note sphincter tone and absence or presence of hemorrhoids.
  b. Outline and examine prostate. Note the form and consistency of the right and left lobes, the character of the median furrow and notch, and the recto-prostatic sulci, the existence of lateral adhesions, and the presence of areas of induration, nodulation or stony hardness.
  c. Outline and examine the seminal vesicles. Note the relative distention, consistency and the character of areas of induration or nodulation. Palpate for vasa differentia. Note character of intervesicular area.
  d. Examine microscopically secretion obtained after massage. (Where the vesicular secretion is to be examined separately from the prostatic secretion, Cabot's method should be used.)

  Cabot's Method:
  1. Urethral irrigation and bladder filled with irrigating fluid.
  2. Prostate massaged, care being taken not to strip the vesicles. Secretion obtained is the prostatic secretion. Have patient void.
  3. Repeat urethral irrigation and bladder distention.
  4. Strip the vesicles. The secretion obtained will be vesicular secretion.
  5. Have patient void and examine the secretion in the voided specimen, if none obtained by the above stripping.
V. Urethral irrigation preparatory to instrumental examination of the urethra.
VI. Examine anterior urethra with a bougi a Boule. (Begin with 29F and use smaller sizes as necessary. Note size of meatus. As a rule, meatotomy indicated when smaller than 26F.)
VII. Examination of posterior urethra with sounds. (Begin with small size, usually 22F and gradually increase the size to 26F or 28F. Never use force. Have sound well lubricated.
VIII. Examination with the endoscope. (This examination should usually be preceded by a period of dilatation in order to get the urethra accustomed to instrumentation.

Three of the more preliminary of the steps in a urological examination, namely, urine, rectal and X-ray, are worthy of detailed consideration since their neglect, or faulty interpretation, causes the greatest number of mistakes in diagnosis.

The viewpoint of the urologist in regard to the information sought, differs somewhat from the ordinarily held in making an examination of the urine. Pus, blood and the type of infection, take precedence in his mind over specific gravity, albumen, sugar, and casts. In the ordinary examination of the urine a few pus or blood cells and an occasional organism have little significance, and are too readily explained as a urethral or vaginal contamination. Pus and blood, unless they produce macroscopic cloudiness, rarely attract particular attention, and even then, if of periodic and short duration, are wholly disregarded. The adoption of the urologist's point of view, that pus, blood, and bacteria, no matter how small in amount are pathological, would often save much valuable time in diagnosis. The method of collection is of the first importance in an examination of the urine for these evidences of disease. Morning specimens or a portion of the 24-hour specimen brought to the office by the patient have no value. The urine must be freshly

FIG. I.

FINDINGS OF THE THREE AND SEVEN GLASS TESTS (after Young).

Portion of Urethra.	Discharge at Meatus.	3 glass test.			Young's 7 glass tests.							Prostate on palpation.	Secretion.
		1	2	3	1	2	3	4	5	6	7		
Pendulous Urethritis	Present	—	—	—	—	—	—	—	—	—	—	Normal	Normal
		S			S								
Bulbous Urethritis	Absent	—	—	—	—	—	—	—	—	—	—	"	"
		S					S						
Posterior Urethritis without Prostatitis	"	—	—	—	—	—	—	—	—	—	—	"	Pus cells in small number
		S							S				
Posterior Urethritis with Prostatis	"	—	—	—	—	—	—	—	—	—	—	Indurated or enlarged	Pus cells in great number
		S		S					S		S		
Prostatistic without Urethritis	"	—	—	—	—	—	—	—	—	—	—	"	"
				S							S		
Seminal vesiculitis	"	—	—	—	—	—	—	—	—	—	—	Seminal vesicle indurated —enlarged	Massage of vesicle gives pus
				C							C		
Cystitis and Pyelitis	"	—	—	—	—	—	—	—	—	—	—	Prostate may or may not be involved	May or may not contain pus
		C	C	C					C	C	C		

S = Shreds.
C = Cloudy.
— = Clear.

voided and examined immediately. Cloudiness may be due to pus, blood, bacteria or, in the male, spermatozoa, and to phosphates, urates or mucus. The microscope is the best test for the first four. A little acetic acid clears phosphatic cloudiness. Heating dissolves urates and standing a few minutes identifies mucus. A knowledge of the character of bladder urine uncontaminated by any secretions of the urethra or accessory organs is wanted in every case, and usually may be easily obtained without the necessity of catheterization. For this purpose the three glass test is a valuable method in both men and women, and if the external genitalia have been previously cleansed the third glass will give urine suitable even for cultural study, except of course in the male when cystitis or vesiculitis is present. Fig. I will show the findings of the three and seven glass tests. The seven glass test of Young is more accurate for the identification of the source of pus in the lower urinary tract, but is indicated only when there is a history or evidence of disease here. After the exclusion of these accessories as the source, the finding of any pathological elements in the bladder urine raises the problem of determining its portal of entry. There are a number of serious kidney lesions which are evidenced at first only by bleeding, and have no associated signs or symptoms. The only evidence of stone in the kidney or ureter may be a few red blood cells in the urine. The hematuria of renal tumor is periodic and is its commonest initial sign. Usually, however, it is of short duration, which fact should not be overlooked. A large percentage of pyurias are treated for cystitis without proper investigation. Usually cystitis is present in these cases, but the cystitis is secondary and will clear up without treatment upon the cure of the primary focus. Primary cystitis in the male sex is practically unknown. In women and female children infections not infrequently ascend the relatively short urethra. Of a number of cases of supposed pyelitis and pyelo-cystitis in girls between two and eight years old, which have been referred for examination recently, in four, cystoscopic examination with ureteral catheterization found the kidneys to be free of pus and infection, which was shown to be in these four cases confined to the bladder. But even in women and children primary cystitis is the exception. It is a grievous error, therefore, to institute any treatment for cystitis without first ascertaining the condition of the urinary tract below the bladder, and if found negative a thorough investigation above the bladder should be made. Fig. II shows the possible source of pus in the female. In the male there are added the accessory genital sources, such as the prostate, seminal vesicles, Cowper's glands and the glands of Litre.

The bacteriology of urinary infections is fairly simple. The colon bacillus is found in from 70% to 80% of renal infections and from 50% to 60% of vesical infections. Staphylococci are present in about 10% and streptococci and the proteus group of organisms are next in about equal frequency. Tubercle bacilli occur probably in 5%. The other organisms reported, of which there is a very long list, are extremely uncommon so that five organisms cover 95% of urinary infections; namely, bacillus coli communis, staphylococcus, streptococcus, proteus vulgaris and tubercle bacillus. The first and last always occur in acid

urines, whereas the proteus group decompose urea and produce a strongly alkaline urine so that a knowledge of urinary reaction with the findings of a stained smear will usually make a bacteriologic diagnosis. A pyuria without demonstrable organism upon ordinary culture media, that is, so-called sterile pus, is significant of tuberculosis or gonorrhoea. A sterile pyuria is often kept up indefinitely in women by gonorrhoeal trigonitis. Tubercle bacilli, however, should always be most carefully excluded in every case with sterile pus. An exceptional form of true sterile pyuria has been recently seen in which the pus invaded the bladder from a metastatic lympho-sarcoma.

The frequency in early life of gonorrhoeal complications and in later life of prostatic disease warrants a thorough rectal examination as a routine part of every physical, excepting most cases of acute urethritis. The palpation of the gland as usually conducted forms a most incomplete examination. A definite procedure should be adopted, as has been outlined above, and the furrow, notch, the depth of the lateral sulci and lateral lobe characteristics noted. The region of the vesicles and vasa should be explored, as well as the intervesicular area. In gonorrhoeal infections a rectal examination has little or no value unless controlled by microscopical examination of the secretion. Massage of the prostate followed by an irrigation and then by stripping the vesicles will usually give the prostatic and vesicular secretions for separate examination; but Cabot's technic, as given above in table I, is often more satisfactory. A warning seems in place here against the faulty interpretation of small amounts of pus on the first examination. If the secretion shows no pus after a thorough massage it is safe to consider the prostate and vesicles negative, but a few pus cells should be regarded with suspicion and all such cases should be made to return in one or two days for a second massage and stripping. It not infrequently happens that on the second examination the secretions will be found loaded with pus. The frequency of vesiculitis as a cause of cystitis or pyuria should also be emphasized. I recall two cases which have had pronounced pyruia for years, in whom no other focus than a chronic vesiculitis can be found. The response to treatment in both has been very satisfactory.

Prostatism is a condition which can be recognized early by the general profession. A rectal examination should never be neglected in a man over fifty. It is not always possible, however, to recognize hypertrophy by a rectal examination and there are many other conditions which will give symptoms of obstruction to urination. The term "prostatism" applies particularly to chronic diseases of the prostate which produce obstruction. These are hypertrophy, atrophy and cancer. A stone, tumor or diverticulum of the bladder may give identical symptoms. Acquired or congenital stricture of the urethra, and urethral stone, or tumor may give a similar picture. Disease or injury of the spinal cord should always be carefully excluded, particularly early tabes dorsalis and general paresis. It is well to remember that many inflammatory conditions, such as cystitis, prostatitis and posterior urethritis often cause acute or temporary urinary disturbances. Atrophy of the prostate, synonymous with contracture of the vesical neck or median prostratic bar, usually occurs in men under 50. The diagnosis is based on symptoms of prostatism, negative rectal finding, residual urine and a certain cystoscopic picture. Cancer of the prostate coexists with hypertrophy in 20% of the cases and hypertrophy is present in 75% of prostatic cancers so that it is seen that the majority of cancers will have an associated hypertrophy. Cancer always attacks primarily the posterior lobe, and the diagnosis depends almost solely upon the evidence of a rectal examination. The cancerous invasion produces a characteristic stony hard induration quite different from that of tuberculosis which is nodular, and rarely primary. This stony hard induration, however, is sometimes simulated by chronic inflammation. The importance of an early recognition of prostatic cancer lies in the fact that the only possibility of a surgical cure depends upon radical removal before the disease has invaded other tissues. When this has occurred only a paliative operation can be performed for the purpose of relieving the urinary obstruction, and these cases may all eventually die of carcinomatosis. Of twelve cases of cancer of the prostate, personally operated in the last three years, not one has sought treatment early enough to permit of radical removal.

It is estimated that 35% of all men over 55 years of age have hypertrophy of the prostate but only 15% of these have symptoms. This 15% should have much more intelligent consideration than they get at present. The majority now are labeled as enlarged prostatics and left to a life of progressive misery until retention or some complication finally demands relief. When symptoms once begin the disease has been found to be progressive. Casper considers this progression in three stages: (1) premonitory, (2) retention without dilatation, and (3) retention with dilatation of the bladder. Where infection occurs, however, as it may quickly do when residual urine is present, the clinical picture may be quite different. An infection supervening in the second stage will usually result in a contracted bladder and operation with a contracted bladder, although it may relieve the obstruction, will still leave frequency of urination. Infection present with back pressure quickly travels up the ureters and a pyelonephritis or, with much back pressure, a pyonephrosis will result. It is of considerable importance to the patient, therefore, that back pressure be relieved before infection occurs or before bladder dilatations and ureteral and renal pelvic dilatations have occurred. At the same time it is not advisable that every old man in whom hypertrophy of the prostate has been discovered, should be operated. The question of the opportune time for operative intervention is therefore of considerable importance. In the diagnosis rectal examination will recognize most forms but there are certain partial and intravesical hypertrophies in which it is unreliable. A valuable aid in

diagnosis is urethral catheterization. This will determine the amount of residual urine, the capacity of the bladder, and the length of the urethra. Normally there is no residual. The normal bladder capacity is from 400 cc. to 500 cc. The normal length of the urethra is from seven to eight inches. Hypertrophy of the prostate which gives symptoms, almost invariably shows a residual which will vary according to the stage of the disease and the type of the hyperthophy. The catheter determines also contraction or dilatation of the bladder. The length of the urethra is almost invariably increased. This increase occurs between the verumontanum and the neck of the bladder. On account of the variations in the length of the anterior urethra in different individuals a measurement of the length of the posterior urethra is therefore of more value than a measurement of the length of the whole urethra. In passing a catheter the point when it strikes the external sphincter can be noted, and the point when urine first appears which denotes its passage through the internal sphincter also noted. The difference between these two is the length of the posterior urethra which normally measures from 3½ to 4 cm. and when hypertrophy is present may measure two to three times this length. Very often hypertrophy distorts the posterior urethra sufficiently to render catheterization difficult. This difficulty is easily overcome with the use of a Coude or a double elbowed (bicoude) catheter or a curved mandrin. A very valuable procedure at the time of catheterization is to make a rectal examination while the catheter is in place. Normally the catheter may be felt almost throughout the length of the prostatic urethra because of the shallowness of the prostatic furrow. In hypertrophy the degree of thickening between the urethra and the examining finger is readily appreciated. Of course an anterior lobe hypertrophy or a subtrigonal or subcervical hypertrophy might easily be missed by such an examination. A urethral sound is more resistant and better for estimating this urethro-rectal relationship. The cystoscope of course is invaluable in doubtful cases and particularly in determining accurately the form of hypertrophy, whether general or confined mostly to a median, an anterior or lateral lobe. Rectal examination and the intelligent use of a catheter will, nevertheless, diagnose practically every case.

It will not be possible to discuss at length here the question of when is the proper time to operate a prostatic. There is no question that the mortality results of prostatectomy would be very markedly lowered from their present comparatively low point if all cases came earlier for operation. In the seventy cases which have been personally treated almost one-third had had symptoms longer than ten years, while less than one-third had had symptoms less than five years. Operation in a man who presents a good clinical risk is very benign and the mortality in this type of case would be very low. To advise every man who presents definite symptoms and a residual urine to have an operation would seem justified.

The importance of x-ray examination in urological conditions is principally for the determination of the presence of renal, ureteral or bladder calculi. It is a sound practice to refer every case with doubtful pyuria, hematuria or renal pain for an x-ray examination but it should be emphasized that the study is not complete when a negative report comes back. The x-ray plate will not recognize all renal stones, and is much more inaccurate in the recognition of ureteral stones. About 20% of stones in the ureter fail to cast a shadow in the x-ray plate. Fig. II shows graphically the position of twenty-eight stones shown by the x-ray (series of Geraghty and Hinman). It is seen by this diagram that none of these stones occurred in that portion of the ureter over the shadow of the sacrum, and it is very probable that it is in this portion that the x-ray misses the greater number of ureteral stones. A negative x-ray finding, therefore, is not complete and all cases in which this condition is possible should be referred for a thorough urological examination.

The following few cases will illustrate some of the serious complications resulting from delay in urological diagnosis. Many of the cases would have been recognized early had such a routine procedure as already outlined been followed.

Case I—Bilateral Renal Calculi:

Ed. F. B. Aet 38. Married. P. C. No. 226. U. C. No. 11565. Admitted June 15th, 1916. Discharged July 31st, 1916. Operation June 19th, 1916. Left nephrotomy. Large coral calculus removed (Fig. III). Patient upon admission had no particular complaint but came to the hospital for examination because of the finding of pus in the urine by Dr. McVey of Oakland.

Family history, negative.

Past history: Diphtheria (10), pneumonia (11), measles (19), mumps (22), right herniotomy (26), left radical mastoid (30). Present illness shows no definite onset. Patient has never had lumbar pain or discomfort. No urinary disturbance. The last few years has had to get up once at night but no difficulty or burning. About twelve years ago, when examined by a physician in Virginia, he was told that his urine contained pus and blood, some albumen and a few casts. Since that time he has occasionally seen blood cells himself in his urine. In the fall of 1912 he had attacks of non-radiating epigastric pain, relieved by hot applications and by vomiting. Took dilute hydrochloric acid, as prescribed by a physician, which relieved the attacks for three or four months.

P. E. Heart negative. Neither kidney palpable. Urine, June 16th, specific gravity 1012, acid. Trace of albumen; no sugar; hyaline and granular casts; many red blood and pus cells; numerous motile bacilli and staphylococci.

Phthalein test, first hour 36%, second hour, 22%.

On June 18th, phthalein test, first hour 36%, second hour 20%.

On June 20th, first hour 25%, second hour 15%.

On June 29th, first hour 24%, second hour 22%.

Blood count, 80% hemoglobin, 9,200 white blood cells.

X-ray examination, June 16th, shows large coral-shaped bilateral stones in kidneys (Figs. IV and V).

Cystoscopic examination shows many pus cells on both sides and motile bacilli found in both specimens. Phthalein appeared on the left in four minutes, right in five and one-half minutes. Thirty-minute output on the left, 15%, thirty-minute output on the right, 15%. At operation the left side was operated on first because the X-ray showed this side to have a smaller stone and the functional

study indicated it to be the better kidney. At the operation the kidneys were found to be very large and sac-like. Perirenal tissues were many times thicker than normal and were found to be very adherent at its upper pole so that it was delivered with difficulty. The stone shown in Figue III was removed through a longitudinal incision of the cortex. At the upper pole of the kidney a small abscess pocket was opened and there was a smaller abscess towards the mid part of the kidney. These were opened and curetted. There seemed to be very little secreting cortex left, but the two halves were sutured together with a few loose chromic gut sutures, enough to control bleeding and the kidney put back in place.

This case has done remarkably well following operation, considering the extreme pyonephrotic kidneys he has to live on (the lumbar wound has been closed for many weeks). Total phthalein test 10/17; first hour 38%, second hour 20%. The urine, however, has been, and is still, loaded with pus. Culture shows bacilli of colon and mucosus capsulatus groups, of which a vaccine has been administered. The patient is actively at work (principal of large grammar school).

Note: The very grave prognosis of this case would have been different had these kidney stones been recognized twelve years earlier, as they would have had the above routine method of X-ray examination been followed.

Case II. Enlarged prostate with median bar and chronic urinary infection. G. B. Aet 63. P. C. No. 66. Admitted August 12th, 1915. Discharged September 29th, 1915.

Family history and past history, irrelevant.

Complains of pain in the region of the bladder, frequency of urination and general loss of strength.

P. I. For more than 20 years patient has had gradually increasing frequency in urination. Eight years ago had acute attack of pyuria with marked burning and pain on urination, which lasted for ten days. A year later frequency and burning recurred in exaggerated form and he would get up as often as eight or nine times at night. Would often be unable to void until he had gotten into a hot Sitz bath. These severe attacks recurred about every year, sometimes lasting two or three months. In between attacks there would still be great frequency, pain and general weakness and the urine has been continuously cloudy and ropy. Has lost about 20 pounds in weight in three years.

P. E. High pitch, blowing systolic murmur at apex, transmitted to the axilla. The abdomen is negative. Urine is loaded with pus; many organisms; few red blood cells; hyaline and granular casts. Phthalein test, August 17th, first hour 13%, second hour 22%. Phthalein test, September 28th, first hour 5%, second hour 10%.

Rectal examination: Prostate is slightly enlarged, soft and smooth. Median furrow and notch partly obliterated. Cystoscopic examination: Residual 150 cc. Bladder capacity 750 cc. Cultures of bladder urine show streptococci and pyocaneus. Bladder wall marked by trabeculated, several cellules present and back of the end of the trigone is a very deep cellule. Marked granular cystitis. Ureteral orifices slightly dilated. Catheterization of ureters shows marked pyelonephritis on both sides. Inspection of the vesical orifice shows perfectly smooth, round outline. No sulci seen. Appearance of collar hypertrophy. There is definite thickening between the shaft of the instrument and the examining finger in the rectum.

Operation, August 19th. Perineal prostatectomy, moderately hypertrophied gland being removed with the curette and the vesical orifice was opened with Young's punch through the perineum. Convalescence uneventful. Control of urination on the 22nd. First voided through the urethra on the 26th. Discharged on the 29th of September. Very little leakage through the perineal fistula. Perfect control of urination. Urine still loaded with pus and organisms. For the past two weeks has been getting vaccine treatment for the kidney infection. Patient returned home and instructed to use Urotropin and bladder irrigations. Last heard from in August, 1916. Urine was still cloudy but the general condition was very much improved. Perfect control of urination. Gets up at night one to three times and urinates every two to three hours during the day.

Note: This case undoubtedly had a contracture of the vesical neck which began to give troublesome symptoms about his 45th year. This was followed by residual and infection and later a small hypertrophy. Recognition of the condition 20 years earlier would have prevented many years of suffering.

Case III. Congenital vesical diverticulum.

G. M. Aet 57. Surgical number 10961. Admitted March 9th, 1916. Operated June 2nd. Died June 24th. Complaint: Frequency and painful urination. Family history, negative. Occupation, book binder. No illness before P. I. Twenty years ago was treated for premature ejaculations by dilatations with cold sounds. Following this treatment had complete incontinence for about two months for which he had to wear a urinal. Completely regained control of urination but with marked frequency and urgency, every hour during the day and four to five times at night. Would have considerable pain in the bladder both before and after urination and noticed at this time that the urine was markedly cloudy. This condition has been continuous up to the present and has gradually grown worse. Four years ago was unable to void when the desire came and forcibly held his urine for some little time when suddenly was seized with severe pain low down in the back. This pain persisted for about six hours and since then his condition has been as before; marked frequency, urgency and painful urination. Five months ago first noticed blood in the urine, which persisted for two days and in two weeks had a second attack of hematuria, since when there has been no bleeding. Status presence: Urinates every hour during the day and four to six times at night. Marked pain before and after urination; marked urgency. Urine loaded with pus. Patient has had pronounced intestinal symptoms for several years; constipation, meteorism and abdominal cramps.

P. E. Heart slightly enlarged. Soft systolic murmur at the apex transmitted to the axilla. Blood pressure 110-70. Abdomen, negative. Neither kidney palpable. X-ray of the kidneys negative. Urine. Three glass test shows cloudiness, loaded with pus and organisms; motile bacilli and cocci; no casts. Urine culture shows pyocyaneus. Prostate not enlarged per rectum. Median furrow and notch are marked. No deep notch to the sides. Phthalein test, March 9th, first hour 22%, second hour 37%. March 10th, first hour 10%, second hour 30%. This test was done with the retention catheter. March 11th, urea nitrogen in the blood 15.1 per 100 cc.

Cystoscopic examination shows no intravesical enlargement of the prostate. In the mid line just behind the trigone is seen the mouth of a diverticulum. Bladder wall is markedly trabeculated and in the region of the right ureter are three well marked cellules. Rectal examination with the instrument in the bladder reveals no thickening between the shaft of the instrument and the examining finger. There is no median bar formation or contracture of the vesical neck. The right ureter was catheterized. Not possible to pass the catheter on the left side. Phthalein appeared in six minutes, first 15 minutes output 10%, second 15 minute output 10%. A ureteral catheter was inserted and the patient taken to the X-ray room. Bladder filled with collargol with the patient in the Trendellenberg position, shows picture in Figure VI. The bladder was then emptied and

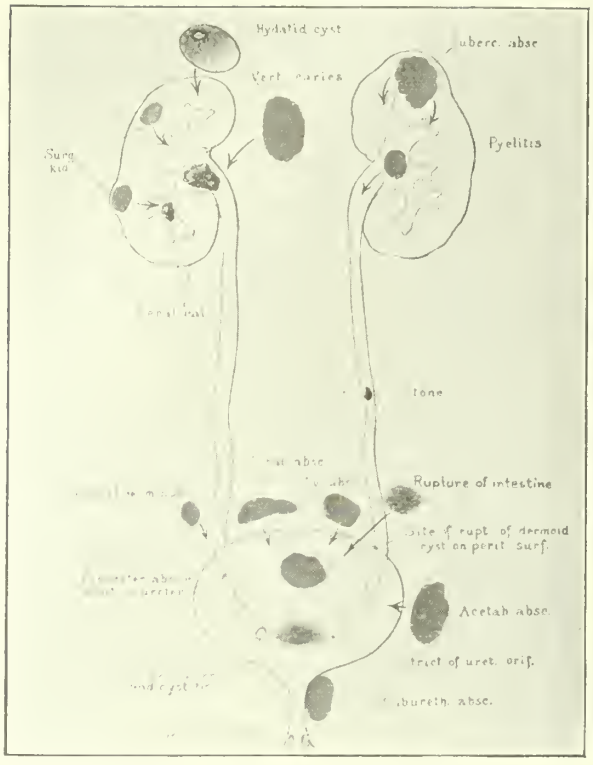

FIGURE II (From Kelly & Burnham).

Diagrammatic representation of possible source of pus in the female. Pyonephrosis and pyelonephritis should be included. In the male the lower genital tract is much more frequently responsible, the analogue of Skene's glands being prostatitis, seminal vesiculitis, Cowperitis and Litritis. Urethritis is potent in both, but particularly posterior urethritis in the male.

FIGURE IV.

X-ray picture of Case I, showing pelves and calyces of both kidneys as beautifully outlined by calcification as when injected with Collargol or Thorium. The smaller stone in the better kidney was removed and patient will return later for removal of the left-sided stone.

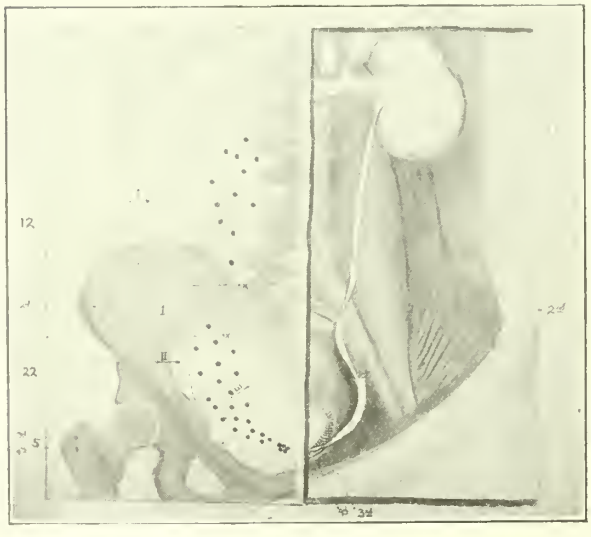

FIGURE III.

Graphic representation of the ureter with its four anatomical points of narrowing. Stones that are missed in the X-ray occur most frequently in that portion behind the shadow cast by the sacral wing. As shown on the right half of diagram, there were no stone shadows in this portion of the thirty-nine cases analyzed (Geraghty and Hinman). In the same series six additional cases of ureteral stone, which failed upon repeated examination to cast a shadow in the X-ray plates, were identified by means of the wax-tipped catheter. As seen in the diagram, five, or fifteen per cent, of the ureteral stones occur in the intramural portion, readily accessible for removal by cystoscopic methods.

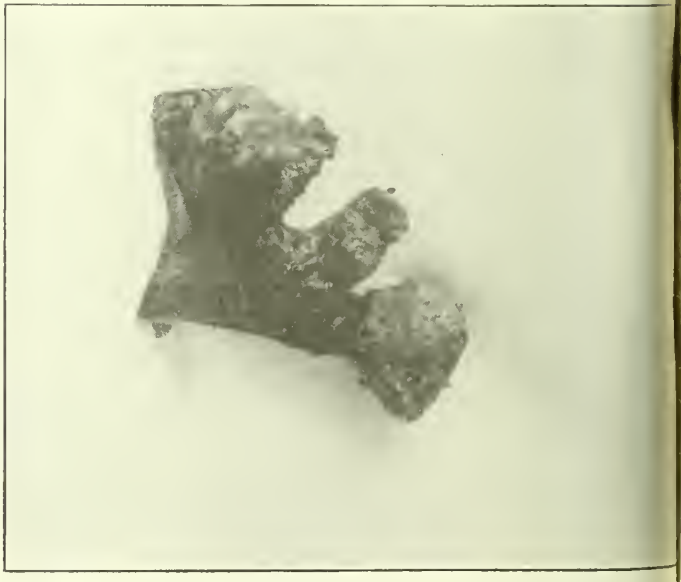

FIGURE V.

Photograph of stone removed by Nephrotomy from right kidney of Case I. The stone presented no line of cleavage by fracture as is common in such large renal calculi, the result presumably of bending of the kidney from movement in respiration.

FIGURE VI, CASE IV.
Diverticulum of the bladder and a dilated left ureter, filled with Collargol.

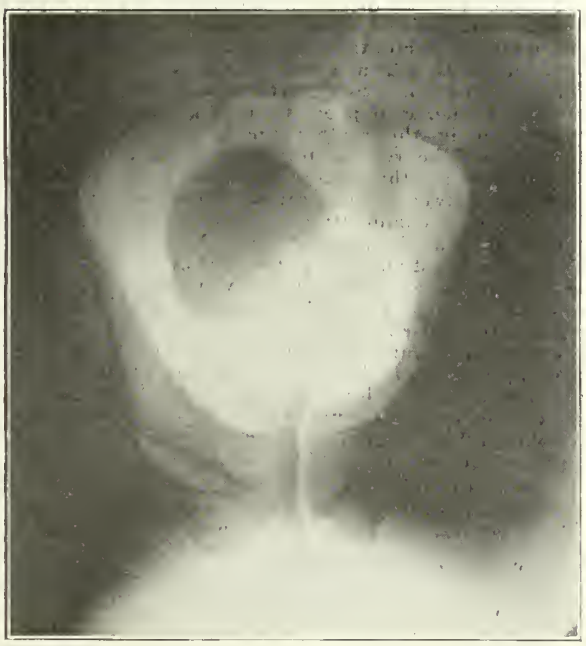

FIGURE VII, CASE III.
Bladder filled with air. Diverticulum and dilated left ureter filled with Collargol.

FIGURE VIII, CASE III.
Photograph of diverticulum removed at operation.

FIGURE IX.
Photograph of kidney tumor removed at operation in Case V.

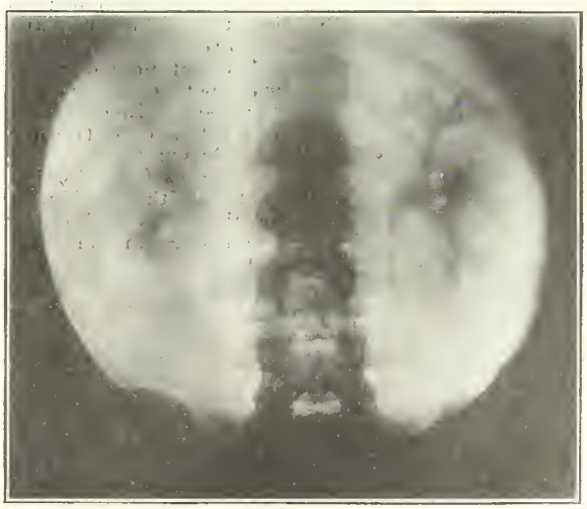

FIGURE X.
Pyelograms (Thorium nitrate) of Case VI. Show beginning retraction of major and bulbous dilatation of minor calyces which is characteristic of polycystic kidney.

distended with air, which shows large diverticulum, markedly dilated left ureter (and left pyonephrosis, not shown in photograph) (Fig. VII).

Operation, March 20th. Marked pericystitis and peridiverticulitis, it being impossible to strip the peritoneum from the bladder without tearing into it. The bladder wall was stripped up with difficulty and the diverticulum exposed, which had dissected deep posteriorly between the rectum and the prostate. Bladder was opened and slit down to the mouth of the diverticulum, which was removed by a circular incision, care being taken to free the right hydroureter which was adherent to the lateral wall of the diverticulum but opened into the bladder independently. The walls of the diverticulum were markedly hypertrophied as shown in Figure VIII. The bladder was closed with chromic gut sutures, large drains left down to the pouch outside of the bladder and a rubber tube placed in the bladder. Patient's condition was satisfactory, bladder drainage being facilitated by suction pump after the method of Churchman. On the 25th of May, the suprapubic wound had completely closed and the patient was draining altogether through the retention catheter. On the 26th the retention catheter was removed. On the 29th phthalein test, first hour 25%, second hour 12%. Urine was very cloudy and loaded with pus. The suprapubic wound has remained dry for four days and the patient has been voiding his urine per the urethra. On the 31st of May, patient was seized with severe cramp-like pains in the upper abdomen, confined mostly to the epigastrium (he had eaten blackberry pie the day before), and showed moderate abdominal distention. Bowels had not moved for two days. All enemata had been returned clear and on the first of June, patient vomited greenish-colored fluid and complained of more abdominal pain. Blood urea nitrogen 28 mg. per 100 cc. On the 2nd of June the patient's abdominal condition remained unchanged. Bowel movement not obtained. Great abdominal distention. Vomited fecal material for the first time. Eserin had been given hypodermically without effect. Blood urea nitrogen 49.4 mg. per 100 cc. at 1:30 p. m. Operation at 5:15 by Dr. Pope. Incision was made on the left lower quadrant just above the anterior superior spine; 50 cc. of clear straw-colored fluid obtained upon opening the peritoneal cavity. Large mass of adhesions in mid line just below the umbilicus consisting of peritoneum omentum and descending colon. Not possible to bring the colon over to the abdominal wall so that enterostomy was done upon the presenting intestine which was ileum. On June 3rd, the intestine was opened at 6 a. m. and about 600 cc. of greenish-brown fluid escaped. Patient much relieved. On June 7th patient had good bowel movement. On the 10th vomiting and cramp-like abdominal pains occurred, and slight abdominal distention. Bowels had not moved for 24 hours either by enterostomy opening or rectum. No bowel movement by the 14th. Ineoagulable nitrogen 90. mg. per 100 cc. on this date (normal 15.). No change on the 17th. Attempt to feed by colostomy openings were unsuccessful. Second enterostomy performed on the 17th of March. The portion of the intestine above the old enterostomy site was collapsed and bleeding, and the intestine above distended. Portions of this distended gut were brought to the surfaee. Patient gradually grew weaker and died on the 24th of June. Autopsy not permitted. Death from chronic peritonitis, intestinal obstruction and pyelonephritis.

Note: This case has shown pronounced symptoms for 20 years during all of which time the condition was not recognized because he had never had a thorough urological examination. Early recognition again would have saved a lifetime of suffering. The progression to pronouneed pericystitis and peridiverticulitis with the formation of localized peritonitis and intestinal adhesions accounts for the fatal issue.

Case IV. Papilloma of Bladder.

T. M. Aet 60. U. C. No. 11912. Admitted August 4th, 1916. Died August 9th, 1916.

Family history and past history, negative. Complaint: Blood in the urine and shortness of breath. P. I. Began nine years ago with burning on urination. At this time there was bright red blood in the urine for three days. This attack cleared up and two years later, or seven years ago, had a second attack in which there was urgency and frequency of urination, with marked difficulty and pain. This urinary disturbance lasted for seven hours, when it practically cleared,. but blood persisted in the urine for four days. The pain at the time of urination appeared to be at the base of the bladder and did not radiate. Three months later had burning on urination for three days but very little difficulty or pain on urination. Attacks of this kind have recurred about every three or four months for the last six years. There has been very little pain or discomfort and the attacks have been mostly attacks of hematuria. The last attack started three to four days ago after three months' remission and the bleeding is still present. Urinates every two hours during the day and once at night. Between attacks there is no nycturia; no diffieulty in starting urine; no dribbling. For the last two weeks has had shortness of breath on exertion. Worked up until two days ago. Has not felt ill at any time. Has lost about twenty pounds in the last ten months.

P. E. Patient very poorly nourished. Showed marked anemia. Systolic murmur at the apex transmitted to the axilla and also heard over the aortic and pulmonary areas. Abdomen negative. Wassermann negative. Blood on admission showed 20% hemoglobin, 1,628,000 R. B. C.; 10250 W. B. C. Blood pressure 110-90. Urine: Specific gravity 1030 acid; slight trace of albumen; no sugar; no casts; many red blood cells; no pus.

Cystoscopic examination: No residual; bladder capacity 200 cc. The base and sides of the bladder near the vesical orifice are covered by a broad villous and papillomatous tumor. The tumor covers up both ureteral orifices and the bladder wall was seen with difficulty over the tumor and showed trabeculation and some cellule formation. There was no evidence of prostatic enlargement and with the finger in the rectum the beak of the cystoscope could be readily felt in the prostatic notch. There was no thickening between the instrument and the finger. Fulguration treatment advised. Proctoscopie examination shows a papillomatotus tumor high up in the rectum. Owing to the low hemoglobin estimation a transfusion was advised and transfusion serum tests were made by the hospital staff. A suitable donor found and the patient transfused. Patient dicd a few hours after transfusion. Autopsy showed ulcerated, probably benign, polyp of the bladder, small papilloma of the descending colon; marked seeondary anemia of all the organs; acute hemorrhagic pancreatitis; chronic diffuse nephritis: hypertrophy of the heart. Gross specimen of bladder saved.

Note: For nine years there was definitc indication for a cystoscopic examination in this case. The fatal result sums up the penalty of its neglect.

Case V. Hypernephroma.

J. G. U. C. No. 11768. Admitted July 17th, 1916. Operation July 27th, right nephrectomy. Discharged August 13th. 1916. Complaint: Bloody urine and difficulty on urination because of blood clots in the urine.

Family history, irrelevant. Past history, typhoid at 15. No other illnesses. Occupation, salesman for a liquor concern.

P. I. As long as 22 or 23 years ago patient first noticed that his urine would be occasionally blood-stained for a period of two or three days

and this hematuria recurred every two or three months. There was never any pain or discomfort at these times. Eight years ago had a violent attack of pain in the right lumbar region, accompanied with high fever. This pain radiated into the right testis and lasted off and on for about a week, clots appearing at this time in the urine. These attacks of right lumbar pain, and voiding blood clots recurred at intervals of about six months during the next two or three years. Patient has been under continuous medical care during the last five years and has had attacks of lumbar pain and hematuria every two to four months. Between attacks the urine is clear and the patient feels perfectly well. Never passed stone. Was cystoscoped for the first time a year ago with negative findings.

P. E. No palpable lymph glands. Scrotum negative. No varicocele. Chest negative. Abdomen negative except for the increase in area of dullness in the region of the right kidney. On palpation the lower pole of the kidney can be barely felt. No tenderness. The liver edge reaches 4 cm. below the costal margin. Left kidney not palpable. X-ray of long bones and chest negative. Diaphragm apparently not pushed up on the right side. Blood: 85% hemoglobin; 5,200,000 reds, 8,000 W. B. C. Urine: Specific gravity 1022 acid; heavy cloud of albumen; no sugar; no casts; many red blood cells; and a few pus cells; no organisms.

Phthalein test, intralumbar, August 29th, first hour 42%, second hour 14%. September 2nd, intravenous, first hour 55%, second hour 17%. August 11th, first hour 38%, second hour 16%. Blood urea test, July 17th, 324 mg. per 100 cc.

Cystoscopic examination: July 19th. Bladder normal in appearance. Blood stained stream seen to spurt from the right ureter. Both sides catheterized. No flow obtained from the right side, even after repeated injections with sterile water. Capacity of right pelvis about 5 cc., which reproduces pain on the right side. The phthalein failed to appear in 45 minutes on the right side. Appeared on the left side in 5 minutes; thirty-minute output on the left was 10% (probably inaccurate because of imperfect injection into the vein). Microscopical examination showed an occasional red blood cell; rare white cell on the left side and very many red blood cells on the right side. Cultures from the two sides negative. Pyelogram shows a normal appearing left pelvis and ureter. On the right side there are very dim scattered shadows in the kidney region. The right ureter is seen to end at about the kidney region, evidence of considerable pelvic deformity.

Operation, July 27th. A tumor mass approximately five times the normal size of the kidney, the lower pole of which appeared to consist of normal kidney tissue, whereas, the upper four-fifths was composed of an irregular, granular appearing tumor typical of hypernephroma (Fig. IX). The capsule contained many large venous channels, each of which required ligation. Convalescence was uneventful. Patient left the hospital August 13th, feeling well. Was seen September 18th. Had returned to work. The wound was healed perfectly. No pain. Urine clear.

Case VI. R. J. Aet 56. P. C. No. 284. Admitted September 1st, 1916. Discharged September 7th, 1916.

Complaint: Hematuria. Family history, negative. Past history: Has had mumps, whooping cough, chicken pox, diphtheria, tonsilitis, typhoid malaria. For the last few years has had nycturia twice. No difficulty in urination; some burning.

P. I. Twenty years ago first noticed bloody and cloudy urine, which lasted about three months. Six months later had a second attack which lasted only 3-4 days. Since then, about every three months, has had similar attacks of three to four days' duration. Last attack one month ago, up to which he had not had an attack for one year. The present attack began six weeks ago and has been continuous since the onset. There is no associated pain or discomfort except for the urgency and difficulty in urination because of blood clots.

P. E. Examination: Soft systolic murmur confined to the apex. Blood pressure not taken. The lower pole of the right kidney is barely palpable. The left kidney not felt. Blood count, 68% hemoglobin; 3,8000,000 R. B. C.; 12,000 W. B. C. Urine: Specific gravity 1025, acid; small trace of albumen; no sugar; occasional granular casts; many white blood cells; a great many red blood cells; a few epithelial cells. Total phthalein, September 2nd, first hour 42%, second hour 19%. September 6th, ploridzin test, 1 cc. of 1 to 200 solution injected subcutaneously. No reduction of Fehling's solution in four hours. Specimens collected every fifteen minutes through urethral catheter. September 7th, first hour 35%, second hour 15%. September 8th, urea nitrogen 22.9 mg. per 100 cc. Total noncoagulable nitrogen, 13.8 mg. per 100 cc. Cystoscopic examination: Residual 80 cc. Bladder capacity 550 cc. Bladder negative for stone, tumor or diverticulum. Inspection of the vesical orifice shows small anterior and bilateral lobe hypertrophy. Ureteral orifices normal in appearance and the left could be seen to eject a blood-stained stream. No blood seen pouring from the right. Both sides catheterized and both showed, miscroscopically, many pus cells; several red blood cells; a few epithelial cells but no casts. Phthalein appeared in six minutes on both sides. Half-hour output, 30% on the left, 20% on the right. No leakage about the catheters as determined by the absence of phthalein in the bladder contents at the end of the thirty-minute period. Patient taken to the X-ray room and double pyelography done, 40 cc. being allowed to flow by gravity on each side. Pyelogram (Fig. X) shows marked deformity of both pelves. The right ureter is dilated and the right pelvis is retracted and deformed. The major calices are retracted and minor calices blunted or obliterated. Opposite the mid part of the pelvis is a small island of Thorium. The left side shows more deformity than the right and simulates the "spider leg" deformity. Two long isthmi of Thorium can be seen leading to the cystic dilatations at some distance from the pelvis, typical of deformity seen in polycystic kidneys.

Note: In the last two cases the significance of hematuria is doubly emphasized. Every case with bloody urine should be regarded as malignant until proven otherwise. For more than 20 years each of these cases gave evidence demanding a thorough urological examination.

TREATMENT OF ECLAMPTOGENIC TOXAEMIA OF PREGNANCY WITH SOME CASE REPORTS.*

By EDWARD N. EWER, M. D., F. A. C. S., Oakland, Cal.

By this term is meant the toxaemia which presents some or all of the following signs: albuminuria, headache, disturbances of vision, high blood pressure, epigastric pain, nausea and vomiting, edema and finally convulsions. It has been suggested that accidental hemorrhage may be added to this list, for if eclampsia without convulsions can cause cerebral apoplexy it may be suspected that it can also cause retro-placental hemorrhage. Albuminuria has often been found in association with this variety of hemorrhage.

The enormous mortality when convulsions supervene places this condition at once among our most formidable diseases. The maternal mortality

* Read before the Alameda County Medical Association, Nov. 14, 1916.

is 20 to 40 per cent. and the infant mortality 30 to 60 per cent., taking the statistics of the country wide. No such mortality occurs in the best clinics, which indicates that better results can be obtained, and that frequent discussion of the treatment in our societies is desirable.

The treatment may be conveniently considered under five headings:

1. Prophylaxis.
2. The pre-eclamptic state.
3. Convulsions first appearing before labor has begun.
4. Convulsions appearing during labor and after dilatation of the cervix is well advanced.
5. Convulsions first appearing a few hours or days after delivery has taken place.

Prophylaxis.—De Normandie says that a physician who has several cases of eclampsia develop in his practice each year is not doing careful work. This may be overstating the case, for patients are notoriously careless about obeying rules of hygiene and many cases of eclampsia develop with great rapidity. Nevertheless, the physician practicing obstetrics has a great responsibility in the matter of prenatal care and the subject is entitled to his best attention.

Urine should be examined every two weeks during pregnancy. The diet should be fairly liberal but not high in proteid. It should be of a character to favor proper daily bowel evacuations, and plenty of water is necessary. Details as to exercise, dress and bathing must be given. The patient should be seen frequently and a record kept of symptoms such as nausea, vomiting, headache, oedema and constipation. Especially important is a monthly record of blood pressure readings. One who is too busy or lazy to do all these things had much better devote his energies to other more lucrative and less onerous branches of medicine.

Case 1. The patient had been three times pregnant. Severe toxaemia but without convulsions was present each time. First pregnancy resulted in a premature baby which survived and is still living. The second and third pregnancies also ended in premature deliveries near term, and both babies died of the toxaemia within forty-eight hours. With this history and a fourth pregnancy beginning it was determined that no point in her hygiene should be neglected. She was given strict instructions regarding clothing, exercise, bathing and bowels and during the last half of the pregnancy the proteid intake was carefully limited, vegetables and fruits were increased and she was made to take a large quantity of an alkaline mineral water daily. The pre-eclamptic syndrome was entirely absent and she gave birth to a healthy baby at term.

The treatment may or may not have been responsible for the gratifying outcome, but there are enough such cases on record to warrant confidence in thorough attention to the hygienic care of not only women with records like hers but all pregnant women.

The Pre-eclamptic State.—This comprises all the toxic symptoms short of convulsions. Headache is often the first sign, or a trace of albumen may be found in the urine. A rise of blood pressure may give warning of impending danger. In normal non-pregnant women it averages 112. During pregnancy it is 118. Any blood pressure over 135 calls for careful investigation and more frequent readings. If it reaches 180 or over, it is probable that other symptoms will soon come on which will demand termination of the pregnancy. As a sole indication for that procedure, however, I believe its importance is overestimated. It has its value in the syndrome, but alone without headache, epigastric pain and the eye symptoms it is not of paramount urgency. I know of a patient who was feeling quite well, Cesareanized hurriedly because she had a blood pressure of 180, and a moderate amount of albumen in the urine. Such enthusiasm for operative obstetrics had best be curbed.

Albuminuria alone should be managed by eliminating proteids, as such, from the diet, substituting green vegetables, fruits and cereals, securing free bowel evacuations and alkalinizing the patient. For this purpose the alkaline mineral waters may be used or cryst. sodium carbonate may be given dissolved in a charged water and with the addition of orange juice and lemon juice. If the condition becomes more serious, Fischer's solution may be given intravenously, in quantities of one quart or more. In one case I saw, this procedure stopped all symptoms for 24 hours, after which they returned as bad as before. This was repeated three days in succession with the same results, and then the uterus was emptied. I have seen much of this alkaline treatment used, both in the pre-eclamptic state and with convulsions. It has been of temporary value but never in an urgent case in my experience did it put aside the necessity for finally emptying the uterus. It is of use in some after conditions which I will mention later. It is of questionable value to put the patient on a strict milk diet for many days at a time. The patient often improves temporarily on milk alone, but if it takes starvation for a purely transient improvement, ending the pregnancy is better treatment than tempting fate too long. The urine should be examined daily and the albumen quantitatively determined. If it increases, and especially if headache, dimness of vision, vomiting and epigastric pain appear in spite of the treatment, the uterus must be emptied. Make this a dogmatic rule. It is apparently nature's method of cure, for at some time during the progress of the toxaemia, in a large percentage of cases, the uterus makes the attempt to rid itself of its burden. If it does not succeed before the toxines overwhelm the system, the woman dies, either with or without convulsions.

It is probably not overstating the facts to say that if the fetus and placenta are delivered early enough, every patient will be saved. Some day this may not be necessary. That time will come when we learn the exact nature of the toxines, if toxines they be, and the manner of their elaboration: then some procedure for their neutralization may be found. These poisons circulating in the blood are probably due to some abnormal change in the protein metabolism, and there is

reason for believing that this disturbance in metabolism originates in the placenta.

The method of terminating the pregnancy depends upon several factors. Usually in the absence of convulsions the induction of labor with Voorhees bags will give the best results. Manual dilatation and forced delivery have no place in the treatment of this class of cases.

Case 2. Labor was due by the Naegle calculation May 22nd. It was the patient's first pregnancy. March 6th there was some swelling of the ankles but no other symptoms of kidney insufficiency. May 1st albumen appeared in the urine. May 3rd the albumen had increased and the blood pressure was 180. May 7th the albumen had greatly increased and blood pressure was 190 in spite of limited diet and alkaline drinks. No other pre-eclamptic symptoms were present, but as the albumen and blood pressure were increasing, it was decided to induce labor. A large Voorhees bag was introduced; pains began in one hour and labor progressed normally thereafter and a small baby was delivered at 10:30 May 8th. The baby showed no evidence of toxaemia and the puerperium was normal.

Case 3. A Japanese woman seven months in her first pregnancy. I was called to see her December 25th because of massive general oedema. The surface would pit at almost any point from head to ankles. The vulva was so edematous that the thighs were kept at right angles to each other as she lay in bed. She complained of headache. There were no eye symptoms. I advised Cesarean section but was overruled by a consultant who insisted upon hot packs and diuretin. The sweating was very depressing and appeared dangerous; so much so that after one of the sweating seances we feared for her life. December 26th the urine contained 0.4 per cent. albumen. It steadily increased till January 3rd, when it was 2.4 per cent. December 27th the blood pressure was 165 Tycos. The urine was scanty. January 6th abdominal Cesarean section was agreed to and a three and a half pound boy was delivered. The mother was restless and in pain for three days. The baby did well on breast milk secured from several other mothers and fed with a medicine dropper. In a few weeks the mother developed a milk supply and was able to nurse it herself.

It is generally advised not to feed the baby at the mother's breast till she has had time to eliminate her surcharge of toxines.

While it is well to keep the skin active in the general treatment of these patients before delivery, obstetric authority is opposed to severe sweating and the use of diuretin.

I would have preferred the bag method of inducing labor in this case had it not been for the oedema of the vulva which made manipulation in the birth canal impossible. I have brought on labor with the bag many times with pre-eclamptic toxaemia as the indication, and have only once seen convulsions come on during the course of the delivery.

Case 4. She was a primipara due April 4th. Six weeks before that date albumen in small quantity was present in the urine. Her diet was restricted, she was given a bottle of Vichy per day and the usual eliminative treatment ordered. Her condition did not seem urgent. Three days later she came to my office looking very ill. She had had a bad night, no sleep, severe headache and vomiting. Blood pressure was 180. Her vision was so blurred that she stumbled over chairs finding a seat in the waiting room. Some smoky urine voided at this time boiled solid in the test tube. She was at once taken to the hospital and a bag introduced under ether anesthesia. As she became partly conscious, a severe convulsion occurred. There was another in ten minutes and a third soon followed. A five and a half pound baby was delivered by vaginal Cesarean section. This operation was chosen in preference to the abdominal section because of the possible danger of infection incident to the previous manipulation in the introduction of the bag dilator and because the baby was small. The delivery was accomplished with high forceps, and the baby's right frontal bone was dented in dragging it over the promontory of the sacrum. Version is better in such a delivery and forceps should never be used unless the head is well engaged. Both mother and baby did well. During the first few hours after delivery the mother retained three pints of Fischer's solution, drip method, per rectum, and later in the day, drank three bottles of Vichy. She passed 120 ounces of urine during that twenty-four hours. The albumen and edema gradually disappeared, but the eye symptoms, as usual, persisted for some weeks.

In the presence of a large baby at full term, vaginal section is likely to be a very difficult performance. Between seven and eight months it should usually be preferred to abdominal section because it is attended with less shock, and there is none of the after pain and disturbance, which is seen after the abdominal variety. It is not as dangerous as the latter, if there have been many examinations or other manipulations which might favor infection. If the baby is large and the classic Cesarean section is feared because of possible infection, then the extra peritoneal section through a low median abdominal incision is to be considered. It does not offer the same danger of rupture of the uterus in a subsequent pregnancy, because the incision is made in the lower uterine segment and cervix after separation of the bladder. The literature is full of reports of rupture of the uterus in patients who have previously been cesareanized, and this alone should be enough to put a warning into the minds of those surgeon obstetricians who, because of the extreme ease and simplicity of the operation, are thus enthusiastically solving all their obstetric difficulties.

Convulsions first appearing before labor has begun.—Convulsions are said to appear *before* labor in about 20 per cent. of all cases of eclampsia. The treatment of patients in whom the toxemia ends in convulsions is still in controversy, but in this country, immediate delivery seems to be growing in favor. Carl Braun pointed out, that the convulsions usually stopped after delivery or became less severe. Duhrssen claimed that he had this result in 94 per cent. of cases, and Ohlshausen in 85 per cent. Peterson of Ann Arbor collected a very large number of cases from the literature, and showed that immediate delivery gave much the best results.

The Strogonoff method, an expectant plan, in which chief reliance is placed upon narcotics and bleeding, is finding some advocates in Europe. The patient is placed in a darkened room, one-third of a grain of morphine is injected, a pint or more of blood is withdrawn and three hours later 45 grains of chloral are given in an enema. If the convulsions continue more morphine and chloral are given. This treatment is not attractive to me,

excepting in cases where the patient is not in surroundings suitable for immediate delivery. Such patients are often treated by forced delivery, as this has been considered an operation suitable for performance in any ranch bedroom or kitchen. It is better to try to subdue the convulsions, and prepare properly for Cesarean section, or wait till spontaneous labor settles the question, or the engagement and dilatation are satisfactory for forceps extraction.

There is another agent for controlling the convulsions where delivery cannot at once be done which has the confidence of many. I refer to veratrum viride. It is used in ten-drop doses of Norwood's tincture, hypodermically every half hour till the pulse rate is reduced to 60 per minute. Its use in my hands has been quite satisfactory and I have seen no convulsions after that pulse rate had been attained. Used in too large doses it may produce severe and long continued vomiting and this is the only bad result I have ever seen or heard of from its use.

There are those who advocate Fischer's solution for these patients when temporizing seems necessary. It is said to relieve the oedema of the brain, the cause of the convulsions, when used in amounts up to three quarts intravenously. I have never used that quantity but I have failed to control the convulsions with one quart, and have seen the patient die, and I have more confidence in the other methods mentioned. It is sometimes useful in combatting such conditions as anuria, and continued convulsions after delivery. I have seen it apparently relieve such an anuria, but for convulsions which occur after delivery I prefer bleeding and veratrum.

If the conditions are not such as to demand palliative treatment the methods of immediate delivery are to be considered. As labor contractions have not begun there is no dilatation of the cervix and perhaps it is not even obliterated. Forced delivery is no longer justifiable, as I have already suggested. There is too much damage to the maternal parts and intracranial birth traumatisms due to high forceps or version are responsible for many serious nervous diseases of infancy, such as idiocy, Little's disease, and other paraplegias and hemiplegias. The obstetrician is bound to consider the interests of the child whenever possible. Kerley says, "The obstetrician should always keep in mind that with him rests the responsibility of making a hopeless invalid or an idiot of the child he is about to deliver."

Vaginal cesarean section, better termed vaginal hysterotomy, if done at full term is subject to the same objections as forced delivery, and is a very difficult operation. Up to seven and a half months it will do very well. If there is doubt as to the period of the pregnancy, it can be arrived at approximately by dividing the height of the fundus above the symphysis in centimeters by three and five-tenths; for the fundus rises at the rate of three and five-tenths centimeters every twenty-eight days, hence it is thirty-five centimeters at full term. The length of the baby can be measured by the pelvimeter from the upper border of the symphysis to the breech after locating it by abdominal palpation. The result in centimeters is doubled and two centimeters are subtracted for the thickness of the abdominal wall. This is Ahlfeld's rule. The average length of the fully developed fetus is fifty centimeters, and this is a more certain indication of its age than its weight. As an example of the application of this rule, we will assume that the distance from the symphysis to the breech in the fundus of the uterus is eighteen and a half centimeters, which multiplied by two gives thirty-seven centimeters, subtracting two centimeters leaves thirty-five centimeters as the length of the fetus, and that is the usual length at the seventh lunar month of intrauterine life.

At full term the decision lies between the classical cesarean and the extraperitoneal variety. The latter is the safer and, like the vaginal, it does not predispose to future rupture. It should be done when possible infection is suspected. The classical section, while very successful, is more dangerous to the mother but safer for the child, and is easier of accomplishment from the technical standpoint.

Convulsions appearing during labor and after dilatation of the cervix is well advanced.—In about 60 per cent. of the cases of eclampsia the convulsions have appeared after labor has begun, and as they usually stimulate severe contractions, engagement and dilatation proceed rapidly and we have conditions suitable for forceps extraction. If there is delay in dilatation after it is fairly well advanced it may be completed manually or Duhrssen's incisions used. The operation is short: it meets all the indications for rapid delivery, and it is in no sense a forced delivery as that procedure is usually understood. Dystocia in some form may of course complicate this method of management, in which case one of the methods of operative delivery will have to be selected. The choice will be determined by the factors already pointed out in describing them, but it is well to remember that the conditions may be anything but suitable for the classic cesarean.

There is one more class of cases to be considered. I refer to those patients in whom the first convulsion appears from a few hours to several days after delivery. About 20 per cent. of eclamptics belong to this class. It is considered the most dangerous by some and the least dangerous by others. I took part in the treatment of one patient many years ago when chloroform was the accepted treatment. This was a patient of Dr. Adams who was given a few whiffs of chloroform whenever the aura of a spasm appeared, and it was kept up for two days and nights with recovery of the patient. Chloroform has no place now in the treatment of any form of eclampsia.

Case 6. Primipara, age 36. Labor due by Naegle's rule November 26th. From July 14th to November 3rd sugar was found in the urine occasionally. She had considerable nausea and vomiting during October. Feet and eyelids were moderately oedematous. No albumen was found in the urine at any time before the birth of the

baby. She ate very little because of the nausea. The blood pressure was not noted. Although she had been told to keep the bowels open she had no movement for three days before the birth. Labor pains began November 4th at 10 p. m. Membranes ruptured at 9:30 a. m. November 5th. A few whiffs of chloroform were given with each pain for the last two and a half hours of labor. One c.c. of pituitrin was given at 10:50 and at 11:30 a five-pound girl was born. The placenta was delivered normally fifteen minutes later. Two-thirds of a dram of ergotole was given per mouth. During next twenty-four hours temperature registered from 98.4 to 99.4; pulse 60 to 80 and respiration 16 to 20. She took 68 ounces of water, 14 ounces of milk and some toast and custard. She passed 40 ounces of urine. November 6th frontal headache began at 3 a. m. There was considerable edema of legs. No epigastric pain, some nausea and slight vomiting at 8:30. I saw patient at 9:30. The uterus was firm and lochia normal. At 10:30 a. m. the baby nursed and a convulsion followed immediately, lasting twelve minutes. This was twenty-five hours after the birth. The nurse gave some chloroform during the convulsion before my arrival and started a Murphy drip of salt solution. Venesection was begun at 11 o'clock, half an hour after the convulsion. When 24 ounces of blood had been withdrawn another convulsion lasting six minutes occurred. The bleeding was continued till 32 ounces had been taken. One-third of a grain of morphine was given and the pulse kept down to 60 with veratrum viride. This required 54 m. hypodermatically during the day. The veratrum was continued for two days whenever the pulse reached 70. The bowels were kept open with castor oil or Epsom salts. The diet was milk and Calso water for a few days. The edema gradually disappeared and by November 13th there was but a trace of albumen in the urine and she was passing from 40 to 80 ounces per day. Improvement was steady and she was finally able to nurse the baby successfully.

Case 7. A patient of Dr. Sampson of Berkeley with practically negative urinary findings, no pre-eclamptic symptoms except slight photophobia and very slight temporal headache. Patient aged 35, four para, previous pregnancies normal. Patient was being treated for pyorrhoea.

Baby born October 1st. Less than usual amount of blood lost. A few hours before delivery urine examination showed slight trace of albumen. Patient voided freely and seemed normal during day following delivery but in evening complained that light hurt her eyes and that head ached slightly.

Eighteen hours after delivery the nurse was attracted by patient's heavy breathing and noticed that she seemed dazed. Convulsion occurred an hour later. At second convulsion blood pressure was 120. U. S. P. tincture veratrum had no effect upon pulse. This was apparently an inert tincture. Two hours later after seven convulsions had occurred, an active Norwood's tincture was used in dose of 10 to 25 minims at intervals of 15 minutes to one hour. At the same time 26 ounces of blood were withdrawn. One slight convulsion occurred after the venesection. Patient was exceedingly restless. The pulse was kept under 80 with veratrum for several days and convalescence was uninterrupted.

Case 8. A patient of Dr. Page seen with him in consultation September 3rd, when she was about seven months pregnant. Albumen was first found in her urine August 28th, and patient's face was puffy, hands swollen and she was suffering from headaches. Blood pressure was 160.

She was put to bed and given milk and Calso, a saline laxative and five grains of diuretin three times a day. August 29th blood pressure 140, urine increased in amount but still highly albuminous. August 30th, urine decreased, albumen continued the same, blood pressure 135. Diuretin discontinued. August 31st, blood pressure 135. September 1st, blood pressure 140. September 2nd, 160, September 3rd, 165, and she had severe headache, dyspnoea and blurred vision. Dr. Page dilated the cervix with bags and delivered a live baby by version; it lived but one hour.

September 4th, severe headache, maximum temperature 99, pulse 110-140. Urine alkaline and containing a light cloud of albumen, no casts. September 5th, pulse 102-114, and in night patient had what the nurse called a nightmare. September 6th at 5:45 p. m. patient had a severe convulsion followed by stupor. Urine was alkaline but showed a marked increase in albumen over that examined the day before. Shortly after the convulsion patient was given a hypodermic of 10 minims of veratrum viride. This was repeated at half-hour intervals without much effect on pulse. It was discovered that the tincture used was inert and another specimen of Norwood's tincture was substituted at 8 p. m. and the pulse was rapidly brought down to 74. The pulse was held down below 90 for the next three days when patient was convalescent.

In this case an active tincture of veratrum viride given early evidently obviated the necessity for bleeding as it did in case 9.

Case 9. A patient of my own. Urinary findings negative before labor. Blood pressure 154. No pre-eclamptic symptoms.

A convulsion occurred three-quarters of an hour after a normal labor. Veratrum viride was given at once hypodermically and pulse brought down from 130 to 60 in one hour. Patient dazed for two hours but convalescence was normal thereafter though the precaution was taken to keep the pulse down under 70 for several days, and the patient was alkalinized.

If the pulse can be gotten down to 60 quickly with the veratrum there will seldom be need for bleeding; if however, six or seven convulsions occur, the pulse and blood pressure are less easily affected by the drug, and bleeding must be resorted to.

SUMMARY.

Be sure the patient understands and practices the well known rules of hygiene during pregnancy. Examine urine every two weeks and take blood pressure at least once per month; oftener if it is shown to be rising. Eliminate, diet, and alkalinize in the presence of albumen in the urine. If in spite of this treatment the albumen increases, the blood pressure continues upward and other pre-eclamptic symptoms are present and becoming more severe, start labor with Voorhees bags. Do not delay too long. Do not demand too many symptoms before acting. If convulsions come on before eight months, in absence of labor, do vaginal hysterotomy if conditions are favorable, especially in multiparae. After eight months do abdominal cesarean section, unless labor is well advanced with dilatation of cervix and good engagement of the head, when forceps may be used.

Convulsions first occurring after labor are treated by most obstetric authorities by the abstraction of twenty to thirty ounces of blood. As adjuvants to this treatment may be mentioned veratrum, alkalies and morphine.

RADIUM: ITS LOCAL APPLICATION AS A THERAPEUTIC AGENT—WITH CASE REPORTS.*

By REX DUNCAN, M. D., Los Angeles.

Radium is an element which owes its therapeutic properties to certain rays, which during the process of its disintegration are being constantly and continuously emitted. These rays, known as alpha, beta and gamma rays, differ in their penetration, chemical and physical characteristics and in their effect upon body tissues.

The alpha rays are of low penetration and seldom penetrate the walls of the container, consequently they are of no therapeutic value.

The beta rays are heterogeneous and less penetrating than the gamma rays (see table No. 1), but have great value in the treatment of a large group of superficial conditions.

The gamma rays are more homogeneous and of great penetration, passing through as much as 10 cm. of lead. Their absorption by the tissues is well shown in table No. 2.

TABLE NO. 1, SHOWING ABSORPTION OF BETA RAYS BY TISSUE.[1]

Thickness of Tissue.	Intensity.
0	100
.65 mm.	85.5
1.95 "	62.0
3.25 "	43.0
4.55 "	26.3
1.00 cm.	6.2

TABLE NO. 2, SHOWING ABSORPTION OF GAMMA RAYS BY VARIOUS SUBSTANCES.[1]

Substance.	Thickness required to reduce the intensity to one-half.
Water	20.4 cms.
Serum	18.3 "
Blood	14.4 "
Muscular tissue	7.6 "

Without entering into a detailed discussion of the subject at this time I wish to mention briefly wherein the rays from radium differ materially from the x-rays (Coolege tube).

First.—Rays similar to the beta rays of radium are not emitted from the x-ray tube, consequently any therapeutic effect peculiar to the beta rays are not obtainable from the x-rays.

Second.—Russ [1] states if a comparison be made using lead as a filter, it is found that very hard x-rays emitted from Coolege tube under a spark gap of 30 cm. (points) and screened by nearly 2 mm. of lead and 7 mm. of aluminum have about 1/30 of the penetrating power of the gamma rays of radium. If, however, the comparison be made with tissue as a filter under the same conditions, the x-rays have a penetrating power of about ¼ of that of the gamma rays.

Third.—Numerous histological studies and clinical observations have demonstrated a marked difference in the reaction of the tissues to the rays. Clinically we not infrequently see an apparent stimulation of malignant growths from x-ray exposure, due perhaps to insufficient penetration of the individual cells.

Fourth.—A very significant fact is the promptness with which x-ray burns and epitheliomata yield to radium radiation.

Fifth.—A very valuable feature of the application of radium is the ease and accuracy with which it may be placed and retained in contact with the desired area, thereby permitting of a maximum radiation of the pathological tissues with a minimum of radiation of normal tissues, and especially is this true in treating conditions within body cavities.

THE EFFECT OF RADIUM RAYS UPON THE TISSUES.

The normal tissues differ in their susceptibility to radiation, and there is even a greater difference in the susceptibility of the various pathological tissues and processes.

Radium has a marked selective action upon certain pathological tissues. Generally speaking, normal tissues are more resistant to radiation than pathological tissues. The changes produced or reaction resulting from radiation will depend entirely upon the dose and technic employed and the histopathological characteristics of the tissue. I wish to emphasize the fact that curative results may be obtained without associated destructive changes, and the effect is in no way similar to that produced by cautery, caustics, or similar agents.

The histological changes occurring in carcinoma are as follows: There results about ten days after the application of radium an enlargement of the carcinoma cells, a hyperchromatosis and a pyknosis of the nuclei. This is followed by karyolysis, karyorrhexis, cytolysis and cell detritus, resulting in the absorption of the cellular and nuclear debris by phagocytes, and the presence of macrophages and microphages. The last stage is the stage of connective tissue formation, proliferation and scar formation, completing the histologic cure of cancer.

In sarcoma, the size of the body and nuclei of the large cells decrease, neoplastic elements elongate and they eventually assume the form of large embryonic tissue cells. The cell mass assumes the character of myxomatus tissue finally resulting in a fibrous tissue.

In addition to the influence of the rays upon the malignant cells, the connective tissue contracts, hardens, and perhaps proliferates. As a result, lymphatics and smaller blood vessels are permanently blocked, and the dense scar produces a condition of starvation of the growth. This together with the direct effect of the rays upon the endothelial lining of the blood vessel, which causes them to swell and obliterate the vessel, accounts for the effect of radium in angiomata, myomata, and a large number of benign conditions.

Gaylord,[2] quoting certain experiments conducted by Murphy, believes that as a result of exposure to radium there has developed immunity to can-

* Read before the Forty-sixth Annual Meeting of the Medical Society of the State of California, Coronado, April, 1917.

1 Colwell & Russ: Radium, X-rays and the Living Cell. Page 63. Published by B. Bell & Son.

2 H. R. Gaylord: Surg. Gynec. and Obst., 1917, XXIV, 94.

cer, and states that they can offer certain evidences to show that radium exercises its curative effects through immunity. From this he reasons that the therapeutic effect of radium is in a large part secondary and not alone a direct action of radium upon the tumors.

Radium, in sufficient quantities, has a marked germicidal effect, as shown by experiments conducted by Chambers and Russ, and cited in table No. 3.

TABLE NO. 3, SHOWING TIME REQUIRED FOR STERILIZING EFFECT PRODUCED BY .5 MILLICURIE PER C.CM.

Organism.	Time.	
B. coli communis..	1 hour 5 min.	The number of organisms in the suspension was approximately one million per c.cm.
Staph. aureus	2 hours 0 "	
B. pyocyaneus	4 " 0 "	
B. anthracis	3 " 10 "	
B. tuberculosis ...	3 " 20 "	

DOSE AND TECHNIC.

The therapeutic action of radium depends on (1) the amount of radium element employed, (2) the method of screening, (3) the extent of and the time of the exposure, and (4) the distance maintained between the radium and the area treated. The dose, or rather the quantity and quality of the rays employed, will depend entirely upon the character, location and extent of the condition to be treated.

It is essential that a sufficient quantity of radium be used, and desirable that the applicator be placed and retained in direct contact with the area to be treated.

A homogeneous raying of the pathological tissue must be secured and normal tissues protected.

For the proper application of radium, in addition to appropriate screens, a considerable number of instruments and appliances is necessary, and many cases will require the construction of some special device for its application.

The technic of application will depend upon the location and character of the condition to be treated, as well as upon the amount of radium, screening and time of application. Healthy tissues should be thoroughly protected, though it is possible with proper technic to treat subcutaneous and deep-seated conditions with but little temporary and no permanent injury to the skin. Superficially, it is usually possible to secure and maintain the desired approximation with but little difficulty.

For application within the mouth I have made use of various dental appliances and devised special apparatus, as the case required.

By the use of the laryngoscope and the oesophascope, radium applicators may be accurately placed within the larynx, trachea, and oesophagus, where after withdrawal of the instruments they are usually retained with little difficulty.

Janeway, after doing a gastrostomy, has devised an ingenious method of applying radium to the lower end of the oesophagus and stomach, and in a personal communication reports very favorable and encouraging results.

In the treatment of certain types of tumors I have received most pleasing results by placing the radium within the tumor substance. For this purpose I have had made hollow platinum needles, within which are placed the tubes of radium. These needles are 3 mm. in diameter and about 3 cm. in length, with walls 5/10 of a mm. in thickness.

For applying radium within the bladder (see figure No. 1), I have devised a platinum needle in which a tube of radium may be contained. Using a slightly remodeled Burger's operating cystoscope the needle may be placed under direct vision into the tumor substance. The cystoscope may then be withdrawn and the radium allowed to remain for the desired time.

Within the rectum and vagina (see figure No. 2), it is possible to so place the radium that the desired area receives the maximum of radiation, and surrounding healthy tissues are adequately protected.

Strict asepsis is of the utmost importance in the application of radium.

RADIUM THERAPY.

I will not attempt to cover that most fascinating and ever broadening field of radium therapy, but wish to emphasize a few common conditions in which radium is of unquestionably superior value, and present a few abbreviated case reports that suggest the broad scope of radium therapy.

Epitheliomata: A thorough review of the literature, as well as my personal observation in the treatment of a large number of superficial epitheliomata, convince me that a larger percentage of cures may be obtained by the use of radium, and with less disfigurement, than by all other methods of treatment combined. Especially is this true in epitheliomata near the eye, nose, lip, or where great disfigurement would follow surgical removal. Figures number 3 and number 4 are typical of the results obtained in this group of cases. In recurrent cancer, or where extensive destruction has occurred, I have received most excellent results.

Uterine Myomata: I have treated a number of cases of uterine myomata and fibroids with marked reduction in size or complete disappearance of the tumor and permanent relief of the symptoms. Case No. 70, reported below, is typical of this group of cases.

Inasmuch as the results are due to the direct action of the rays upon the uterus rather than their effect upon the ovaries (see figure No. 5), normal menstruation may be conserved in a large percentage of cases. In several cases of metrorrhagia and menorrhagia of obscure origin, I have received most excellent results. In this condition, as well as in uterine myomata, radium is far more conservative and no less effective than surgical treatment.

Carcinoma Uteri: During the past year I have treated more than 20 cases of inoperable and recurrent carcinoma of the uterus. (At another time these cases will be reported in detail.) All of these cases received marked benefit from the treatment, and a number are now free from all evidence of involvement, though it is too early to speak of them as cured. Schmidt,[3] Kelly and

[3] H. Schmidt: Surg. Gynec. and Obst., 1916, XXIII, 191.

Burnham,[4] and others, report clinical cures in more than 25% of a large number of cases treated by them. From my personal experience and a thorough study of the literature, I believe that the following conclusions are warranted:

First.—The results of radium therapy in inoperable and recurrent carcinoma surpass those of any known therapeutic agent.

Second.—Radium not only relieves the pain, hemorrhage and discharge, but indirectly also improves the general health and condition of the patient.

Third.—Border line cases and operable cases should receive a preliminary course of radiation.

Fourth.—Operative cases should be subjected to post-operative prophylactic radiation.

In closing, I wish to emphasize that in addition to sufficient radium and adequate appliances, a thorough knowledge of its chemical and physical properties, histological action, in addition to considerable experience, are essential to the proper application of radium.

Case No. 81. S. R. Male, age 34. Mechanic.

Diagnosis: Tubercular sinus, following resection of the knee joint. Referred by Dr. W. W. Richardson.

Present Condition: Four months previous to treatment, right knee joint had been resected because of tubercular involvement. There persisted a sinus extending from the joint downward on the inner and anterior surface of the leg about 5 inches in length, with characteristic discharge. Bismuth paste and other treatment had been employed without benefit.

Treatment and result: Seven treatments using 55 mg. of radium were employed. The radium, screened with platinum, was inserted directly into the sinus. Following the second treatment there was a diminution in the amount of the discharge and improvement was rapid. In one month from the first treatment the discharge had ceased, the sinus was closed and apparently healed. Eight months have since elapsed and there is absolutely no evidence of involvement. The condition is apparently cured.

Case No. 122. Mr. A. S. Male, age 24.

Diagnosis: Lupus, involving skin and conjunctiva, lower left eyelid. Referred by Dr. Granville MacGowan.

Family and previous history: Negative.

Present condition: General physical condition good. About one year previous to examination lupus began on cheek under left eye, gradually extended until it involved an area about 5 cm. in diameter, including lower lid and conjunctiva. The condition had yielded satisfactorily to other treatment with some scarring, with the exception of margin and conjunctiva of lower lid. Cornea somewhat inflamed.

Treatment and result: Four treatments using 25 mgrms. of radium were employed, resulting in rapid improvement and complete cure in about one month. There resulted no disfigurement from the radium treatment, nor injury to the cornea.

Case No. 114. Miss M. C. Age, 24. Case seen with Dr. Carl Kurtz.

Diagnosis: Fecal fistula, following appendectomy.

Present condition: About eight months previous to examination, patient was operated on for an acute gangrenous appendicitis, followed by drainage, which resulted in a fecal fistula. Numerous attempts, including bismuth paste and various operative procedures, were employed to close the fistula, without results.

Examination: Tortuous canal about 7 cm. in depth in right iliac fossa exuding characteristic discharge and occasionally gas and fecal matter. Considerable rigidity and tenderness on pressure in right iliac region.

Treatment and results: Two treatments, employing 40 and 25 mg. respectively, were given. In ten days all discharge had stopped, adjacent tenderness was markedly improved and the fistula apparently closed. More than one year has since elapsed and the fistula has remained healed. All local evidence of involvement has long since disappeared, and the patient is enjoying splendid health.

Case No. 72. Mrs. W. C. K. Age, 46.

Diagnosis: Exophthalmic goiter.

Family and previous history: Negative, excepting occasional attacks of "so-called" indigestion.

Present condition: About three years previous to examination patient noticed slight enlargement of the neck, discomfort from pressure of collars, etc. Normal neck measurement 13½ inches. Neck continued to enlarge slightly on right side and more on left, until neck measurement reached 15¾ inches. There has developed gradually, increasing the nervousness and tremor, tachycardia, dyspnea and generally impaired health, marked increase in gastric disturbances and slight exophthalmos.

One month after beginning treatment there was marked improvement in the patient's general condition and slight decrease in the size of the tumor. Two months after treatment the enlargement of the right lobe had disappeared and marked reduction in the size of the left lobe. Neck measurement 14¼ inches. Pulse returned to nearly normal. Nervousness and dyspnea disappeared, and patient was apparently well. All pressure symptoms had disappeared.

Case No. 105. Male, age 7. Referred by Dr. H. P. Barton.

Diagnosis: Cervical tubercular adenitis. Bilateral.

Family history: Parents well, three brothers well, no history of tuberculosis in family.

Previous condition: Chicken pox, measles several years ago with satisfactory convalescence, adenoids and tonsils removed one year previous to examination. Apparently in normal condition though not especially robust. About two months previously mother noticed swelling of the glands of the neck on both sides which gradually increased in size, also impaired general health and afternoon temperature.

Present illness and examination: Child anemic, under weight, morning temperature normal, afternoon temperature maximum 100.

Examination: Throat and chest negative. Superficial cervical glands on both sides swollen, superior group hard and as large as a hen's egg.

Treatment: Eight treatments using from 60 to 100 mgrms. of radium element.

Results: Within two weeks the glands reduced over 60%, and in five weeks were not palpable. Marked improvement in general condition.

Case No. 101. L. G. Female, age 70. Referred by Dr. John B. Barrow.

Diagnosis: Melano carcinoma. (Diagnosis made by microscopical examination of section.)

Present condition: About six weeks previous to examination patient noticed several small papules on skin over second joint dorsal surface right thumb. Condition grew rapidly, and on examination presented more or less ulcerated and markedly indurated new growth about 2 by 4 cm. in diameter.

Treatment: Five applications employing 90 mgrms. of radium element. Two months later reaction had subsided and condition is apparently well. There is a soft pliable scar which can scarcely be told from normal skin.

Case No. 89. Y. W. T. Male, age 72. Referred by Dr. Charles R. Jennings.

Diagnosis: Epithelioma of the lip.

[4] Kelly & Burnam: Jour. Am. Med. Assn., 1915, LXV, 1874.

FIGURE No. 3. CASE No. 76.
Squamous cell Epithelioma involving lower eye lid.

FIGURE No. 4, CASE No. 76.
Six weeks after Radium treatment. Condition apparently cured. No impaired function or disfigurement, except absence of lower lashes. Lachrymal duct open.

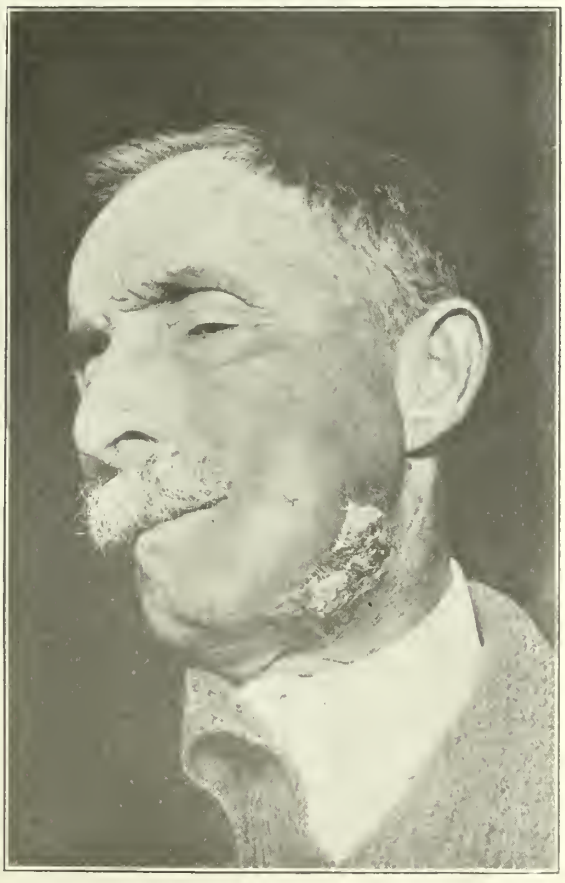

FIGURE No. 6, CASE No. 108.
Extensive recurrent Carcinoma, involving maxillary bone and over-lying tissues, and suppurating carcinomatous tissue extending through skin as shown. Ulcerated, soft tumor mass fills left half of mouth.

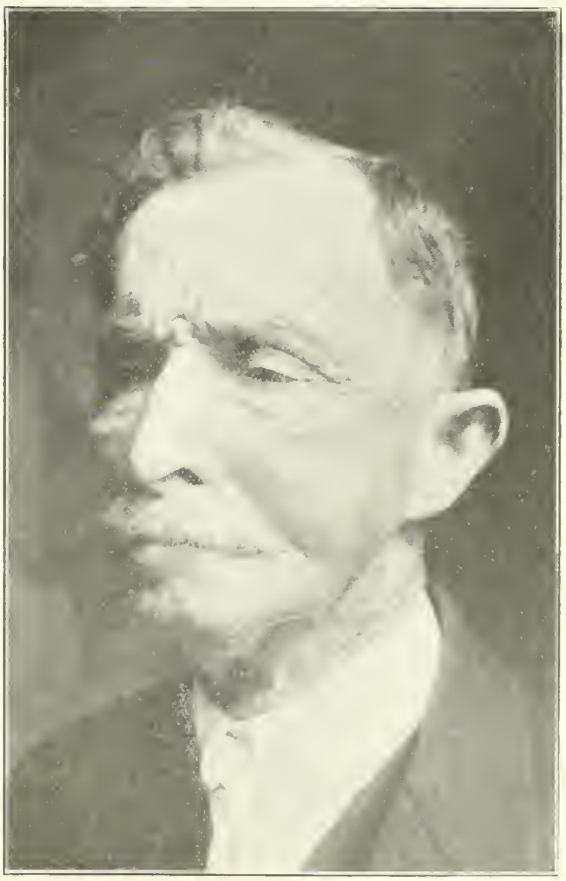

FIGURE No. 7. CASE No. 108.
All local evidence of involvement absent. No apparent metastasis, and marked improvement of general condition of patient.

FIGURE No. 8.
Squamous cell Epithelioma. Recurrent after surgery, x-ray and various methods of treatment.

FIGURE No. 9.
Permanent cure six weeks following Radium treatment. (Note excellent cosmetic result.)

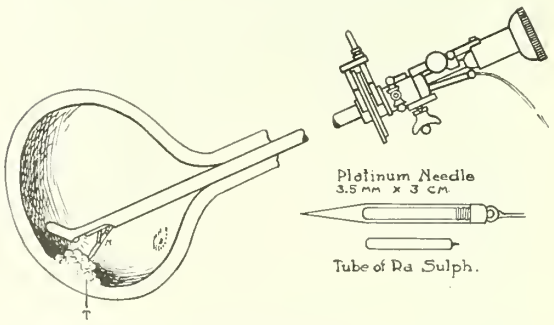

FIGURE No. I.
Insertion of platinum needle containing Radium into bladder neoplasm, using operating cystoscope.

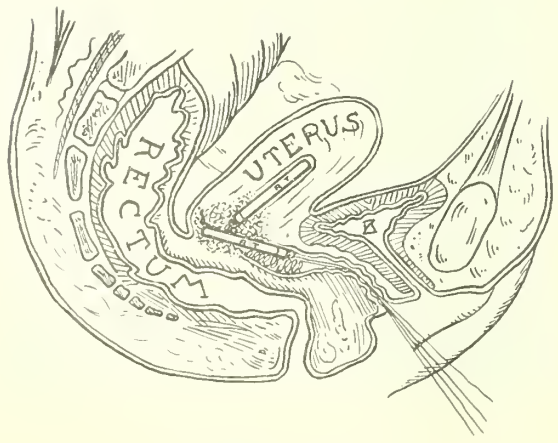

FIGURE No. 2 A.
Radium applied Carcinoma Uteri, involving vaginal walls.

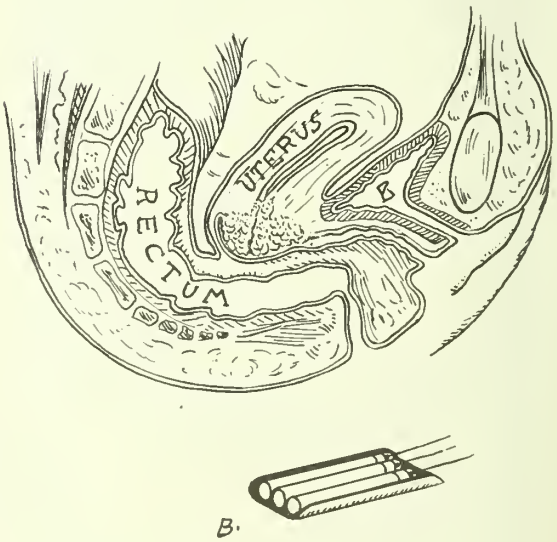

FIGURE No. 2 B.
A. Carcinoma of the cervix involving the anterior vaginal wall.
B. Radium applicator with lead to protect rectum.

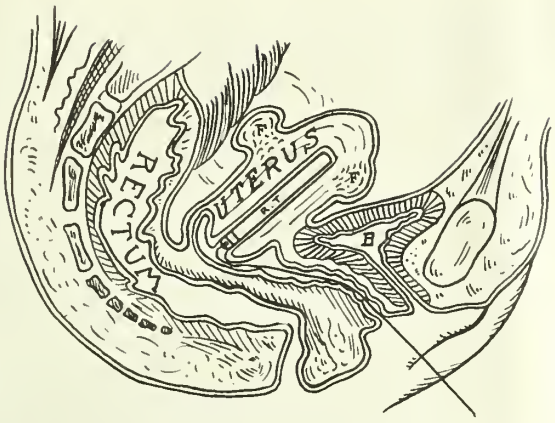

FIGURE No. 5.
Method of treating Uterine Myomata with Radium.

Family history: Negative.
Previous history: Negative.
Habits: Has chewed tobacco for past 56 years. Does not smoke nor use alcoholics.
Present condition: General health and physical condition excellent. About four years previous to examination noticed small abrasion right side lower lip, which would not heal and gradually increased in size, slightly sensitive. Examination reveals area nearly 1 cm. wide and 2 cm. long denuded of mucous membrane, slightly ulcerated, indurated and exuding slight serous discharge, glands not palpable.
Treatment: Four treatments 2 hours each, using 55 mgrms. of radium element.
Results: After about 6 weeks the reaction had completely subsided, and the condition was apparently cured. No disfigurement.

Case No. 70. Mrs. D. A. J. Age, 36. Referred by Dr. John Mac Daniel.

Diagnosis: Uterine Myomata.

Present condition: Married, two children. Youngest six years. General condition weak and anemic. Weight 98 pounds. More or less backache, and painful menstruation since birth of last child. Past year, menstruation regular but profuse. Past two periods marked hemorrhage. Examination reveals slightly irregular tumor mass, on posterior wall of uterus, about three inches in diameter.

Treatment and result: August 25, 1916, patient received four intrauterine applications, employing from 50 to 90 milligrams. September 13, 1916, careful examination revealed no irregular nor palpable tumor of the uterus. Preexisting pelvic tenderness had disappeared. There had also resulted marked improvement in the general condition of the patient. December 22, 1916, on examination it was found that the uterus had returned to normal size, no irregularity, the cervix normal size and color. On October 1, 1916, patient had a slight show, lasting about 2 days, but since, there had been a complete amenorrhea. The general health of the patient has continued to improve. When last seen, June 1, 1917, was apparently normal.

Case No. 110. Mrs. J. G. B. Widow, age 60. Referred by Dr. Arthur Domann.

Diagnosis: Recurrent carcinoma, involving axillary lymphatics.

Present condition: One year previous to examination right breast and axillary glands were removed on account of early carcinoma of the breast. Post-operative prophylactic x-ray treatments were given. About six months later small nodule was noticed in the axillary region, which gradually increased in size until at the time of examination there presented a mass about 5 inches in length, 2 inches broad and correspondingly thick. No ulceration and not adherent to the skin. General condition of the patient fair.

Treatment and result: First treatment consisted of three applications, employing 55 to 100 mgrms. of radium, screened in platinum needles, which were inserted directly into the tumor mass. Absorption of the tumor began promptly, and in six weeks had reduced to about one third the original mass. There also resulted considerable improvement of the general condition of the patient. A second course of treatment was then given, which in about one month resulted in total absorption of the tumor and continued general improvement. In this case all evidence of involvement had disappeared, and some months later patient is apparently well.

Case No. 140. Miss V. McC. Age, 19. Referred by Dr. Clarence Toland.

Present condition: Congenital angioma, left side and end of tongue, which has increased in size with the growth of the patient and at the time of examination was about one inch thick by about one and one-half inches in diameter.

Treatment and result: Five treatments employing 40 to 90 mgrms. of radium were given. Seven weeks later the angioma had disappeared, and the tongue was of normal color, size and contour.

Radium seems to exert a specific effect in both deep and superficial angiomata.

Case No. 108. J. M. P. Male, age —. Figures 6 and 7. Referred by Dr. Clarence Toland.

Present condition: About two years ago patient was operated on for an early carcinoma involving the buccal mucous membrane within the left side of the mouth. The condition promptly recurred, was again operated and recurred. Cautery, x-ray, etc., have been used without benefit. Patient has lost 25 lbs. in weight in the last three months, great difficulty in eating and limited to soft and liquid diet, considerable pain, headache and general toxic condition.

Examination: Extensive carcinoma involving the left inferior maxillary bone and overlying tissues, and presenting large ulcerated and soft tumor which fills left half of mouth and involves adjacent mucous membrane. Tumor has broken through the skin in two places where there are small masses of suppurating carcinomatus tissue.

Treatment and result: Treatment was begun on January 25, 1917, and eight treatments were given, using from 70 to 100 mgrms. Both local and general improvement was prompt and marked, and by February 17th, the swelling and tumor mass was reduced to almost normal. Patient had gained 7½ lbs. in past 10 days, and was able to eat with little difficulty, and pain much less severe. Several additional treatments were given to localized areas. April 20th, examination revealed no local evidence of involvement, and there has resulted marked improvement in the general health of the patient.

Case No. 59. Mrs. H. S. C. Age, 55. Referred by Dr. A. J. Scott, Jr.

Diagnosis: Infiltrating papillo carcinoma of the bladder.

Present condition: Patient gives long history of bladder trouble. Six months previous to my examination, because of pain, hemorrhage, frequent urination and impaired general health, patient had consulted and been examined by a physician, who on vaginal examination found a tumor on the left side, lower abdomen. Patient at that time refused a cystoscopic examination.

Examination: Six months later, cystoscopic examination revealed infiltrating papillomatus tumor surrounding and concealing opening of left ureter, ulcerated and bleeding after slightest trauma. Vaginal examination reveals tumor adherent to anterior vaginal wall and bladder, about three inches long by one and one-half inches in dia-

meter. Microscopical examination of tissue shows a papillo carcinoma.

Treatment and result: Three treatments were given, employing 100 mgrms. of radium element. Radium was placed under the tumor in the vagina, and my special platinum needle containing radium was inserted into the tumor mass through a slightly modified Burger's operating cystoscope. After placing the needle the cystoscope was withdrawn, and the radium allowed to remain for the desired time. A few days following treatment, patient began passing fragments of tumor with the urine, this continued for about three weeks with more or less pain and at times some bladder spasms. Seven weeks after the first treatment, cystoscopic examination by Dr. W. B. Dakin failed to reveal any evidence of bladder involvement. Vaginal examination negative and there were no symptoms of involvement elsewhere. The general condition of the patient has also been greatly improved, and the case is apparently cured.

Case No. 76. K. McD. Female, age 45. (See figures 3 and 4.) Referred by Dr. Bogue.

Diagnosis: Squamous cell epithelioma. (Confirmed by section and microscopical examination.)

Present condition: About six months before examination patient noticed small nodule on margin left lower lid, extending to opening of lachrymal duct and rapidly increasing in size.

Examination: Ulcerated tumor about 1.5 by 1 cm. in diameter, on margin of left lower lid. Marked conjunctivitis.

Treatment and result: Treatment consisted of three applications of 55 mgrms. of radium. Six weeks later tumor had entirely disappeared and condition apparently cured. No impaired function nor disfigurement, excepting absence of lower lashes. Lachymal duct open.

Case No. 96. F. C. Male, age 48.

Diagnosis: Endothelio sarcoma (confirmed by section and tissue examination).

Family and general history: Negative.

Present condition: About one year previous to examination patient had three lower right molars extracted. Teeth had been badly decayed and giving trouble for some time. Some soreness remained, and for about eight months patient had been aware of a tumor in this location which had gradually increased in size and recently had become painful when eating.

Examination: Tumor about 7 cm. long and 2 cm. in diameter, involving right inferior maxillary bone and extending into oral cavity. Small ulceration of mucous membrane at apex of tumor.

Treatment and result: Platinum needles containing 50 mgrms. of radium were inserted into tumor substance, and 40 mgrms. placed over tumor. Tumor promptly began to decrease in size, and after eight weeks had completely disappeared. There is no evidence of involvement elsewhere.

Case No. 123. Mrs. W. G. Married. Age, 44.

Previous history: Married at 19, four miscarriages, self induced at about two months term, last 10 years ago. No pregnancy since. Menstral history normal. Until about six months previous to examination general health was good.

Present condition: About six months previous to examination menstral period lasted about two weeks with profuse hemorrhage, next two periods same, and last three months continuous flowing, at times profuse, also increasing odorous discharge, loss of weight, weak and anemic. Red blood count 2,300,000, hemoglobin 42%, leukocytes 6,000.

Examination: Offensive odorous discharge, large cauliflower mass involving cervix and extending into adjacent vaginal walls, induration extending down two-thirds of the anterior vaginal wall, tumor friable and bleeds readily.

Treatment and result: Four 12-hour treatments using 87 mgrms. of radium were given, with an interval of 24 to 72 hours between treatments. Before the last treatment was given hemorrhage had practically stopped, marked decrease in the odorous discharge, and sufficient absorption of the mass had occurred to make it possible to locate the cervical canal. In less than two weeks all hemorrhage and discharge had ceased and there was a marked improvement in the general health and condition of the patient. Examination six weeks later revealed no evidence of involvement excepting slight redness of the cervix. Red blood count 4,700,000, hemoglobin 85%. Additional prophylactic treatment was given. While it is too early to speak of this case as cured, a number of months have elapsed without any evidence of recurrence, and the patient enjoys apparently normal health. This case is typical of the palliative effect obtained by the proper use of radium in a very large percentage of cases. Statistics show more than 25% of clinical cures after one or more years have elapsed.

THE MALARIA PROBLEM IN THE RICE FIELDS.

By STANLEY B. FREEBORN, University of California.

The advent and phenomenal growth of the rice industry in California has introduced a serious public health problem. The growing of rice demands that the entire acreage under cultivation be flooded from approximately June 1st to October 15th to a depth of about five inches with water, stagnant or in a gentle current.

Unlike the malarial mosquitoes of other rice-growing districts, the Anophelines of the Sacramento Valley find their optimum breeding grounds in these fields flooded for rice culture. As a result, mosquitoes, and consequently malarial cases have increased in direct proportion to the growth of the industry.

The summer of 1912 saw the first commercial planting of rice in California. This was at Biggs in the Sacramento Valley, and totalled 1400 acres. Each year since has shown at least a hundred per cent. increase until this year's estimate places the acreage of rice at 80,000. Of this the Sacramento Valley contributes 70,000 acres and the San Joaquin 10,000.

Agriculturally, the production of rice is an extremely fortunate venture as it utilizes land made unsuitable for any other crop either on account of nitrogeneous insufficiency due to previous croppings or on account of unfavorable texture. The annual rice consumption of six pounds per capita far exceeds the domestic supply. This fact coupled with a fairly heavy protective tariff and the knowledge that most of the land used for rice is worthless for any other crop adds millions to the state's wealth this year and insures a permanent place among California's agricultural projects for rice culture.

The attractive returns of the industry have

caused a headlong rush on the part of the ranchers to put their land into rice. This mania for speedy and lucrative returns has left its mark on all branches of the industry. Already many ranchers by their utter disregard of all agricultural tenets, such as crop rotation and seed selection, have stripped the soil of nourishment and clogged the fields with weeds. The same haste and carelessness has characterized the use of water. The irrigation ditches are anything but water tight and the inevitable result is that the surrounding fields have been converted into veritable bogs. Almost without exception the roadsides are bordered, and in some cases actually covered, with stagnant pools that are developing myriads of malarial mosquitoes every month. It is a conservative estimate that 50 per cent. of the mosquitoes of the rice field country find their breeding places in these inexcusable situations outside the fields under cultivation.

There are two species of Anophelines breeding in the rice fields and throughout the Sacramento Valley. The most common one, *Anopheles occidentalis*, is a medium sized, brownish mosquito with four distinct black spots on its wings. This species is known to be a malaria carrier. The other, *Anopheles pseudopunctipennis* looks very much like the former, except that the wings are mottled and marked with two yellow spots on the anterior margin. This species is not generally included in the malaria carrying group but circumstantial evidence seems to incriminate it.

In midsummer, twelve days generally suffices for the mosquito's growth from egg to adult, lengthening to eighteen or twenty days in the spring and fall. About a week after emerging from the pupa or "tumbler" stage in which the larva transforms into the adult, the female mosquito lays approximately 125 eggs. This process is in constant progress from March to November in the Sacramento Valley.

All the rice field mosquitoes pass the winter as unengorged adults, i. e. adults that have not had a suck of blood. Hence it will be seen that the plasmodium must be carried over the winter in the body of human beings owing to the fact that all infectious mosquitoes must of necessity have a meal of blood in order to become infected and are thus unable to pass through the winter.[1] If, therefore, all persons harboring gametes could be cured during the winter, the mosquitoes emerging from hibernation in the spring months would have no sources at which to become infected and malaria would be eliminated from the community.

In this land of personal liberty it is impracticable, however, to bank our hopes on such a procedure no matter how strongly it is urged or how efficient its result. Another method of prevention is to control the mosquitoes, for in the absence of Anopheline mosquitoes malaria cannot be transmitted from person to person and the disease would be stamped out with the recovery of those already infected. Both of these practices,—the winter control of gamete carriers and the control of the mosquitoes, have their ardent proponents, but the ideal system seems to rest in the careful combination of both.

The control of the rice field mosquitoes is the most difficult problem that has yet been encountered in the work of mosquito abatement. At the present time there is no larvicide known that can be safely and economically introduced into the irrigation water to kill the larvae present. Oil, the usual larvicide, will kill the rice plants as speedily as it will the mosquito larvae. Salt, although efficient in controlling fresh water mosquitoes, will cut down the rice yields and render the land unfit for further use. Vegetable larvicides are at once too expensive and inefficient to consider. Among the natural enemies, fish and dragon flies are the most important. The former are handicapped by the irrigating systems and the shallowness of the water to such an extent that at present their economic value as mosquito feeders is almost negligible. Dragon flies undoubtedly catch a great number of adult mosquitoes but their life cycle requires an entire season and their brood is comparatively small. In short, they can be looked upon as a check, but doubtfully as a control.

The breeding of mosquitoes outside the rice fields in pools caused by seepage is, however, inexcusable. In the first place, careful and intelligent construction of the irrigation ditches would do away with the majority of these breeding places except where the water table has been raised to the surface, and secondly, those pools that would not be eliminated by careful construction could, in a majority of cases, be drained or filled. All these expedients failing, surface oiling with a fuel oil of about 28 degrees Beaumé will destroy all the larvae present at that time. Oiling, however, must be repeated at intervals of two weeks throughout the breeding season.

The water is turned into the fields about June 1st. The mosquitoes, however, have been breeding in available pools since March or sometime earlier. Every mosquito destroyed prior to the irrigation of the rice fields means the cutting off of its countless progeny that would otherwise breed unmolested in the flooded fields throughout the season. Then, too, at the end of the season, the mosquitoes breed for a month or more in neglected pools after the water is drawn from the fields, producing the adult mosquitoes that overwinter and start the next season's crop. It seems plain, therefore, that if an ardent anti-mosquito campaign were waged before the water is turned into the fields in the spring and after it is drained off in the fall, together with the control of outside pools during the flooded period, that the mosquitoes left to start the rice field generations and hence the number of malarial cases, would be greatly reduced in number.

Malaria bearing mosquitoes seldom travel more than 500 yards from their breeding places and after their first suck of blood will bite only at dusk or at night. Thus it will be seen that persons whose occupations or residence takes them into

[1] Mitzmain, M. B. Public Health Report, Vol. xxx, No. 29, July 16, 1915, of U. S. P. H. D.

the rice field districts at dusk or at night should depend on careful quinine prophylaxis in conjunction with tightly screened dwellings and veils.

SUMMARY.

1. The cultivation of rice which demands shallow, practically stagnant water throughout the summer months, has increased the number of mosquitoes and malarial cases in proportion to the phenomenal growth of the industry.

2. Fifty per cent. of the malarial mosquitoes are breeding in pools adjacent to the rice fields.

3. The mosquitoes breed in neglected pools for two months or more before the rice fields are flooded and for another month after the water is drained from the fields.

4. The solution of the malaria problem in the rice fields rests to-day on (1) the elimination of all breeding places outside the rice fields before, after and during the time the fields are flooded, and (2) thorough quinine treatment during the winter months in conjunction with quinine prophylaxis, and careful screening during the months when mosquitoes are prevalent.

COMMON ERRORS IN DIAGNOSIS OF SYPHILIS OF SKIN AND MUCOUS MEMBRANES.*

By GEORGE D. CULVER, M. D., San Francisco.

Syphilitic lesions of the skin and mucous membranes are often of more than ordinary interest. Many persist through months or years without treatment or even in spite of indifferent antisyphilitic treatment. Some simulate other conditions so closely that no wonder incorrect diagnoses are made.

Even with excellent laboratory assistance in diagnosis it is possible for atypical lesions to run the gauntlet and escape proper treatment for a long time. The keenest observer may fail to recognize a lesion that when seen later may stand out as typical. Syphilis, though showing itself in a great variety of forms, tends always to types of eruption, depending largely upon the location of the lesion. This repetition of type in definite areas is most interesting and often helpful toward a correct conclusion.

The natural dependence of the diagnostician upon good laboratory proofs tends to make him rely less upon the clinical picture. This leads to error in both positive and negative conclusions. Our first clinical impressions, if the foundations are sound, are often of greater value than technically determined conclusions if those conclusions fail in absolute positiveness. In no other disease in a small percentage of cases are the technical findings more apt to mislead than in syphilis.

This is not meant to be an exhaustive discussion. In such a big subject as syphilis it is possible to mention in a short paper only a few of the most common errors. I have, therefore, limited my remarks to actual experience.

As to the initial lesion of syphilis, failure to recognize a chancre is still frequent. This is especially true of extragenital chancre. An ugly, hard, persistent sore, located anywhere extragenitally, may be a chancre even if as unusually placed as upon the instep or an eyelid, or the back of the neck. A not uncommon location is upon the lips, where usually it is a rapidly growing, ugly looking sore which ulcerates, and looks and feels much like a swiftly developing epithelioma. As a rule it has the same cartilaginous hardness, and the same central ulceration. It may involve the whole lip. Nevertheless, though the mimicry of chancre to epithelioma may often be close, an error should be avoided. Any large hard ulcer of a lip that has been present not longer than two months, usually in a young person of the age when such a location of infection would not be unlikely, and which is accompanied by swollen lymphatic nodules, must be regarded as possibly a chancre. I recall an instance of a man with a chancre of the upper lip, which was so slow in yielding to treatment that he went elsewhere for advice, and was persuaded to have it cut out. It promptly sprang up again, and he returned for further internal treatment, which was finally successful. The mouth is a situation in which it is easy to err in a diagnosis. Two instances in which the tonsil was removed because of chancre, in which later evidence of syphilis was convincing, have come to my attention within the last few months. In one case there was a reappearance of the indurated primary ulcer in the tonsillar site after removal of the tonsil. An unusual feature of this case was the appearance of the roseola upon the soles and nowhere else. It is important to differentiate a syphilitic ulceration of the tonsil, whether primary or gummatous, from Vincent's angina, which can give an almost identical picture. In the latter condition the microscopical findings are so definite as quickly to dispel any doubt.

I saw an instance of an undiagnosed primary lesion of the lower gums which was so extensive as to result in the removal of all the lower teeth. It was five months before a correct diagnosis was made. A single gummatous ulcer of the tongue may easily be mistaken for a chancre. A chancrous ulcer is usually of more marked cartilaginous hardness, and the base and walls look more active, giving an impression of an acute inflammatory process, while the edges of a late ulcer are either steep and punched out looking or undermined, and the base is gently raised, flattened and a duller red. What may make it more puzzling is the fact that enlarged lymphatic nodules under the jaw are not an unusual accompaniment of late lesions in the mouth, and when present they are likely to be tender. The lymphatic inflammation is in all probability due to secondary infection in the open wound. This was eminently the case in an instance recently seen, in which the lesions were situated on the upper surface of the tongue tip, a situation peculiarly exposed to irritation and friction against the front teeth.

A very small sore on the penis not unlike a few broken vesicles of herpes simplex and without perceptible induration, may prove to be a chancre. Cauterization of such a sore should be inflexibly

*Read before the San Francisco County Medical Society, August 1, 1916.

avoided pending a positive conclusion. One error such as the following should make the physician extremely cautious:

A man with a non-indurated sore upon the glans penis sought advice. He was fully convinced the sore was a chancre. Five physicians, including myself, tried and almost succeeded in persuading him it was not. Repeated search failed to demonstrate the treponema pallidum. Wassermann tests were made, and different technicians reported first a slightly positive, then a positive, and finally a strongly positive reaction during the short period of five days, the strongly positive reaction appearing thirty-one days after the sore was first noticed.

The tendency to misinterpret a syphilitic roseola is less strong than the reverse attitude of assuming a drug eruption or a skin manifestation of one of the more innocent diseases as being syphilitic. The former error, however, is not uncommon. The fact that not infrequently a positive Wassermann report is given in non-syphilitic conditions makes it still more serious and increases the liability to the accident. For instance, a young man with gonorrhea of five weeks' duration presented a macular rash of quite general distribution, and his blood serum was reported as giving a positive Wassermann. It was not a drug eruption, the rash was more upon the surface, and of a less definite character than a roseola, not the discreet rosy blotches of syphilis, which appear as if delicately painted just beneath the superficial layers of skin. It disappeared within three days. The rash and possibly also the Wassermann reaction were from intestinal intoxication.

Pityriasis rosea is often mistaken for a syphilitic roseola, and may precipitate both the patient and the physician into a trying dilemma. This skin affection should always be considered whenever a macular rash that may be syphilitic is seen. It generally begins as a mother patch which may or may not have been noticed by the patient. A search should be made for this patch, the most frequent location being somewhere in the region of the flank. If it is a superficial rash with cigarette paper wrinkling, the wrinkling seen best in an oblique light, it is easily distinguishable from a roseola in which the cigarette paper wrinkling is absent, and in which the redness is more deeply situated and of a more delicate rose tint. One should always look on the forehead, scalp, palms and soles, as well as in the commoner locations on the body for rose spots of syphilis, as the spots of pityriasis rosea will not be found in these locations.

A man of thirty-five while attending the Exposition, with his wife, developed a scaly patch on the prepuce. This was followed by a wide spread macular and patchy eruption of brownish red color and with cigarette paper wrinkling. His physician whom he first consulted, made a diagnosis of syphilis. Being assured in his own mind that he must have contracted the disease innocently, the man immediately informed his wife as to the physician's conclusion. She insisted upon his seeking further advice, but on being assured it was pityriasis rosea was inclined to think it was a trumped-up diagnosis to avoid a family row.

A roseola may escape a correct diagnosis because of an absence of a definite history. A middle-aged woman of excellent habits consulted her physician for a white spot on the right tonsil, which was treated. An ulcer appeared, became quite hard, and was accompanied by swollen nodules in the right side of the neck. It resisted local treatment and the tonsil was removed. Three months later a rash appeared, first on the flexor surfaces of the arms, then on the body in the flanks, and upon the legs, and when I saw her it was a typical roseola, which had been present about three weeks. Her blood serum gave a strongly positive Wassermann.

It seems that errors are more frequently made in the diagnosis of late cutaneous syphilis and late lesions of the mucous membranes than in early syphilis. There is often such a close resemblance to epithelioma that all aids possible have to be used to reach a conclusion. The same applies, although of less frequent occurrence, to tubercular ulcer, lupus vulgaris and lupus erythematosus, and also to the commoner skin diseases, psoriasis and the indolent seborrheids. The above mentioned diseases may in turn be easily mistaken for syphilis as may erythema multiforme, acne indurata, and some of the uncommon conditions, such as leprosy, mycosis fungoides, Bazin's disease, and almost all other granulomata. The list is by no means complete, but it includes the more frequent. It would seem that iodid eruptions are at present less frequent than formerly. This drug is not so commonly employed since the introduction of salvarsan.

I have the record of a case in which there was extensive destruction of all the soft tissues of a large part of the forehead, including the periosteum and outer plate of the frontal bone, which had started more than ten years before and had slowly but steadily progressed. There seemed no doubt clinically that it was an epithelioma, and many previous diagnoses of this had been made. As it occurred before the advent of the Wassermann reaction, and as it was inoperable if cancerous, mixed specific treatment was prescribed as a therapeutic test. Improvement was soon noticeable. Though it required many months, healing was eventually complete. The separation of a tremendous slough, including a piece of the outer plate of the frontal bone, in size, irregularly four by seven centimeters, was an interesting feature of the case.

At the present time many physicians are loth to make a therapeutic test when laboratory findings are negative. This should not be, as it is not at all unusual for long standing late lesions to clear up under antisyphilitic medication after all other proofs have failed in establishing a diagnosis. Yet one should not reach a conclusion too quickly from the effects of medication.

Recently a man with a large ragged ulcer about five centimeters in diameter, situated on the back of the neck, sought treatment. The lesion had been growing about three years. There was an objection to an operation, and as there was suffi-

cient indication in its appearance for antisyphilitic treatment, potassium iodid internally and mercurial ointment externally were prescribed. Under the medication the ulceration almost disappeared and improvement was marked. It then looked even more like an epithelioma than before. It was removed and microscopically shown to be epithelioma-tous, without any evidence of luetic involvement as might have been surmised.

Late ulcerative syphilis about the mouth and nose is not uncommon, yet incorrect diagnoses are frequently made. In Demember of last year I saw an instance in that of a man thirty-two years old with an ulcer on the upper lip in the left side of the mustache, which began two months before. It was very deep with a necrotic center and rolled, uplifted, undermined edges. There were a large number of scars, the result of ulcerations that began below the vermilion border of the lip, a little to the left of the median line, and spread across to beyond the right corner of the mouth. There was immense scarring of the extensor surfaces of both forearms and of the legs. These scars were the result of ulcerations which began in 1905. Under neosalvarsan and grey oil injections, healing was rapid. This case was interesting because of the long continuance of the ulcerative process, of the varied diagnoses that had been made, and the like varied but ineffective lines of treatment that had been followed.

Another and even a more interesting instance of ulceration near the mouth was in that of a woman thirty years old who gave a history of first noticing what were supposed to be canker sores along the inner surface of the lower lip two years previously. Then followed a more prominent affection of the left corner of the mouth about one year later. This healed and the affection appeared at the right corner of the mouth about six months before she came in, involving both the skin and mucous membrane. It remained almost stationary for the whole time. There were present enlarged but freely movable lymph nodules both sublingual and right submaxillary. There was a small scar above and one below the right corner of the mouth. The patient had been almost constantly under the care of one or another physician, but apparently was never given antisyphilitic treatment. The Wassermann reaction was repeatedly negative and so was misleading.

The presence of scars as of ulcers healed, is a strong point in favor of syphilis, and of great assistance in the diagnosis of a doubtful lesion. There are other conditions about the face which in partial healing may leave scars, notably lupus erythematosus, and far more rarely in this country, lupus vulgaris. The scars resulting from healed gummatous ulcerations are more deeply pitted, as would be expected from the character of the lesion which, when absorbed, is usually absorbed rapidly, leaving a very definite loss of substance. This loss is only partially filled in by rapid forming scar tissue, hence the resultant depression. I have seen marked keloidal growths follow the healing of syphilis. They were from early ulcerations that through their secretions formed crusts, which covered a secondary staphylococcic infection. This secondary infection stimulated the production of exuberant granulation tissue, and this in turn necessitated that the epithelial covering should grow up over the granulations, thereby forming hypertrophic scars.

Herpes zoster often leaves deeply pitted scars on the face. These scars should not be puzzling even when some subsequent lesion appears, as their limitation to one side only and the clear ascertainable history of their production, prevents them from being mistaken for anything else.

The kidney shape of luetic ulcerations due to healing in one section while spreading in all others, is not as marked in gummatous lesions on the face or mucous membranes as elsewhere upon the body. A very common location of slowly spreading syphilitic infiltration is in the naso-facial fold extending into the nostril. It may progress for months with very little ulceration and be easily mistaken for epithelioma. A most deceptive manifestation of late syphilis not infrequently occurs upon the scalp as split pea-sized ulcerations in groups of few or many. They are the result of the breaking down of miliary gummata. It is here that the raw ham color is so definite that it should be a key to further inquiry.

Lupus erythematosus is frequently diagnosed as syphilis. It is a disease that may so closely resemble a serpiginous syphilide as to deceive anyone, especially when not present as the typical bat wing eruption of the nose and cheeks. It may have a deeply infiltrated edge that spreads from a portion that has healed, leaving a scar just as syphilis may, but without ulcerating, and the scarring is smoother and less depressed. Lupus erythematosus is almost always scaly or crusted and has horny comedo plugs distributed throughout the active portion, while the spreading syphilide when not ulcerated has a smooth surface almost velvety in character. I mention lupus erythematous as it is not uncommon, whereas lupus vulgaris is rare in California.

Seldom is syphilis mistaken for leprosy, but it is probably not too broad a statement to make that practically every instance of cutaneous leprosy seen in California has at some time during its course been thought to be syphilis. As the Wassermann test is frequently positive in leprosy, the affair becomes more complicated. Habitual testing of the sensations of touch, pain and temperature in doubtful serpiginous lesions may lead to an occasional surprise, for if the lesion be lepra and not syphilis, the anesthesia will be the deciding point in the diagnosis.

Throughout this discussion I have purposely placed but little stress upon history as a conclusive factor in the diagnosis of cutaneous syphilis. In a very large proportion of the instances we see in which errors have been made either by ourselves or others, the history has been misleading. Often there is an absence of a positive history when the condition is syphilis, but in other instances the patient will call attention to the fact when seeking advice, that he had had syphilis, whereas the lesion for which he seeks advice is non-syphilitic. It is safest to place only such re-

liance upon the history as is indicated by the case in hand.

Another especially important point to be considered in the avoidance of error is that before reaching a positive conclusion as to a lesion present on an exposed part of the skin, all other parts should be carefully inspected.

A widow, forty-one years of age, was sent in with an eruption on her left arm, which had been diagnosed as tuberculosis. The eruption consisted of dusky red blotches on the extensor surface of the left forearm, with a good deal of infiltration. It was noted in the record at the time that "the infiltration is deeply seated and may be partly due to having had a leech applied yesterday." It was also noted at the first visit that "lupus nodules can be seen with dioscopy." I never saw a better example of the apple jelly nodules seen through a glass slide pressed upon the lesion to remove the blood from the skin. The eruption was of fifteen years' duration. When it first appeared the patient was helping her husband in butchering, a trade exposed to tubercular infection. The diagnosis of lupus seemed a positive one and treatment was begun accordingly.

On a subsequent visit I learned there was a periostitis of the left tibia, a number of small ulcers and many scars of healed ulcers near the left knee that were without doubt specific. The first ulcers had appeared nineteen years before. On the first visit the patient was too timid to mention the leg condition, and I was so sure the lesions on the arm were tubercular I did not examine her more thoroughly. Under antisyphilitic treatment all the leg lesions healed and simultaneously those of the arm as well.

It is sometimes extremely difficult to differentiate between syphilitic and varicose ulcers of the leg, especially when the ulcers are out of their usual zones. The upper third below and about the knee seems to be reserved for syphilis, whereas the venous defects usually occur below this region. Tubercular ulcers of the leg are infrequent unless associated with other tubercular conditions. It may not be possible to conclude from the ulcer's character which it is, but in most instances a conclusion can be reached from the clinical appearance. Multiplicity speaks for syphilis as does the presence of scars. Punched-out crater-like ulcers, irregularly kidney shaped, are usually syphilitic, and there is lacking the veil-like film seen over the base of a varicose ulcer. This film, which is caused by streptococcic infection, is nearly always present in the latter, and the ulcers are usually surrounded by doughy oedema and brownish-red discoloration. Close inspection of the oedematous skin will reveal many superficial venules. Pain may be present in either, but it is more frequently severe in varicose ulcers. That all varicose ulcers have syphilis as an etiological factor, as is sometimes suggested, is incorrect.

I have under my care at the present time an elderly woman with multiple ulcers over the instep, and about the internal malleolus of the left foot, that were mistaken for varicose ulcers. There is an absence of specific history and of concomitant proofs of syphilis, yet the unusual and long-standing ulcerations are healing rapidly under antisyphilitic medication.

In dealing with doubtful lesions I have found it helpful to habitually consider certain points: A syphilitic lesion may remain for years and not ulcerate; never cauterize a sore on the penis until a positive diagnosis is possible; never make a snapshot diagnosis; carefully manipulate the lesion for the character of induration; examine the whole body; look for scars of former lesions; look upon the absence of history as of only secondary importance; consider a doubtful Wassermann negative unless further proof develops. If the clinical picture does not warrant it, never allow the patient to depend upon one positive Wassermann; with sufficient clinical evidence do not fail to prescribe specific treatment; a therapeutic test may clinch a diagnosis. And here it may be remarked that it is not necessary to administer salvarsan for this purpose; mercury and potassium iodide may prove even more in a few days than would an injection of salvarsan. Never tell a patient he has syphilis until you are sure of the correctness of your diagnosis.

I think it is sometimes forgotten that a patient once weighted with the thought that he has syphilis almost never again feels free. Such a diagnosis when once impressed upon him, even though it be strongly contradicted later, leaves him in constant fear. The demand made upon physicians for immediate opinions is so great that hurried conclusions are almost forced. It is wrong that more should be required of the physician than of an attorney in a difficult situation, unless time is urgent. He has the right to insist upon all the time necessary to thoroughly study his case, and he should assume this privilege. It is far better for him that he lose the case than that a hurried and incorrect diagnosis be made.

Discussion.

Dr. D. W. Montgomery: The subject dealt with is of perennial interest—the differentiation of one disease from another or even from many others. The reverse of this, the consideration of the similarity of diseases, is hardly of less interest. Shortly ago I had a conversation with Dr. A. L. Fisher on this latter subject. Disease is the result of a conjunction of the human body and an irritating agent. Symptoms are the expression of the disturbed physiological processes. The variation in the symptoms is in a large measure due to the way the irritant acts on the body or on the particular part of the body selected by the irritant. The body and its physiology being practically the same in all races and in all climates, and the action on the tissues of one irritating agent being necessarily very similar to the action of any other irritating agent, the wonder is that the points of differentiation between the different diseases are so marked. But it has been only by the labor of a great number of very talented men that these differences between disease processes have been discovered and formulated.

The similarity between diseases must be greater between the individual maladies of certain groups, as, for instance, between those constituting the granulomata. Syphilis, however, in its course belongs to several groups successively. At first, as a chancre, it belongs to the group of the infectious ulcers. Then as the infective agent becomes dispersed throughout the body, and the extensive cutaneous eruptions appear, syphilis partakes of the characteristics of the exanthemata. Finally as the

disease slacks in intensity and becomes localized in this or that situation, it resembles the chronic granulomata.

Dr. Culver dwelt on the diagnosis between syphilitic roseola and pityriasis rosea, which is particularly important because this error may occur at a critical time in the course of syphilis, when the urgency for treatment is great and the danger of conveyance of infection, if untreated, is imminent.

The liability to err both negatively and positively is always present. The doctor, for instance, cites a case in which what was probably an intestinal intoxication gave rise to an eruption simulating either a pityriasis rosea or a syphilitic roseola and a positive Wassermann reaction of his blood serum.

We are apt to forget how recently the English-speaking medical world has been apprised of the existence of this disease, pityriasis rosea. Adamson recently in a few obituary remarks on the life of the late T. Colcott Fox, mentions that Gibert, the French dermatologist, was the first to describe this disease, and that in 1880 Duhring had described it in America. Four years afterward, in 1884, Fox wrote a short paper in the London Lancet on pityriasis maculata et circinata, which was the first account of the disease in England.

Dr. H. E. Alderson: This is a very interesting, important, and practical subject, introduced in an interesting way, and a subject which those of us interested in this question are always very glad to see brought up before a general medical meeting. If these matters were discussed more generally there would not be so many mistaken diagnoses.

It is not as difficult to make a mistake in the diagnosis of a late cutaneous syphilide as it is with an early syphilide, and yet we often see a diagnosis of epithelioma made in these cases and operation advised. During the past few years I have had a considerable number of such cases. Most of these patients were frightened at the prospect of an operation; went to several men in succession, all of whom made a diagnosis of epithelioma, and it turned out to be syphilis.

In making a diagnosis in early cases, I think a common mistake is in looking for the classical symptoms of Hunterian chancre. Many primary syphilitic lesions fail to show induration and some other classical features. We make it practically a matter of routine to use the dark field condenser in all cases, even though some of the sores may be clinically herpes or chancroid. A few days ago we had a beautiful specimen of serum, amounting to a practically pure emulsion of treponoma pallida, obtained from beneath the floor of what was clinically a small herpes on the corona. Often, however, it is difficult to make a satisfactory dark field examination from genital lesions the first time the patient comes in, for the reason that the average patient obtains calomel, black wash or some other mercurial and tries to get rid of his trouble himself, with the result that the surface is for the time being freed from spirochaetes. We make it a practice to have these patients wash the surface with some mild soap and a non-bactericidal solution, and apply normal salt solution compresses, cold or lukewarm. Then after a couple of days it is possible to get satisfactory specimens.

Cutaneous syphilis can assume the form of so many skin diseases that we get in the habit of regarding almost every atypical case with suspicion. I have frequently seen nodular ulcerating crustaceous syphilitic lesions around the mouth and nose strongly resembling carcinoma. Fairly often a patient will come in with grouped crusted lesions or pigmentation in the distribution in which we commonly see herpes zoster on the side of the thorax, and the resemblance to a healing zoster is very striking.

Dr. C. F. Welty: Syphilis of the ear, nose and throat is comparatively easy of diagnosis in all of its different stages by trained physicians, in that line of work.

I once saw a chancre of the ear and made the diagnosis easily.

Deafness, due to syphilis, is much more complicated but may be cleared up with almost positive certainty.

Nasal syphilis, we see in the form of gummata, granulomata and bone lesions, all easy of diagnosis. As a rule syphilis does not attack the cartilage, usually bone. Once I did a septum operation for gumma of the septum. When I found a straight bone, I knew I had made a mistake. However, the circumstances surrounding the case were such that they led me in an entirely different direction.

Throat, buccal cavity, tongue, tonsils, pharynx: chancre of the lips seen every short while; chancre of tongue occasionally seen. Mucous patch may be seen anywhere, more particularly just within the mouth and about where the mucous membrane of the buccal cavity comes in contact with the cutting surface of the teeth.

Deeper ulcerating surfaces seen more particularly involving tonsil and about the margin of the gums.

Gummata of the hard palate: Tertiary manifestations of syphilis, such as large amount of scar tissue with ulcerations intervening. In other instances where the tongue is deeply furrowed, it should make you very suspicious.

As I said before, all these conditions are more or less easy of diagnosis, and doubly so when you can confirm it by a shortened bone conduction, or a syphilitic lesion elsewhere.

In fact, I am so sure of myself on many occasions that I do not care for a Wassermann reaction; it is only done to satisfy the patient.

Syphilis of the larynx is to me more difficult of diagnosis, and in many instances will have to depend on the therapeutic test confirmed by Wassermann reactions.

In all chronic, laryngeal cases with an increase in the size of the true or false cord; a perichondritis or other enlargements or ulcerations, syphilis must always be thought of and differentiated from a simple inflammation produced by irritation, tuberculosis and carcinoma as well as rhino scleroma.

Dr. H. B. Graham: In the diagnosis of syphilis of the mucous membranes, we hear much about the ulcerated lesions, gummata, and the broken patches of the mucous membranes; little is ever said about certain other signs that we get in all kinds of syphilis, both congenital and acquired. In many syphilitics we find a general, diffuse, bluish swelling of the mucous membranes, which occurs in the nose, mouth and larynx. It is aggravated by tobacco, and is a sign that is easily seen and very easily referred to syphilis as soon as the diagnostician once gets the blue picture in his mind. In the clinic, we very seldom miss a definite positive Wassermann in these cases.

I have said at some other meetings here that the diagnosis of syphilis is possibly more easily made above the neck than in any other region of the body. If the physician will examine the 8th nerve, pay attention to the eye, and to the mucous membrane of the nose, mouth and larynx, he will get his diagnosis of syphilis quicker than anywhere else because there are always signs there that can be localized. But I want particularly to call attention to this blue, soggy swelling of the mucous membranes, particularly of the nose.

Dr. John C. Spencer: My colleague, Dr. Welty, having started the ball rolling in the way of honest confessions, I want to report something which occurred in my experience in the pre-Wassermann days.

A brawny young Scotchman came to me with

the firm conviction that he was the subject of a syphilitic infection. Clinically his evidence was so meager that I was misled. He was engaged to be married to a very estimable young woman, and upon my diagnosis depended his perfectly manly desire to terminate the engagement, or leave matters in statu quo. There was a very vague history of a small lesion on the penis which I did not see. When he came to me, all he showed were a few scaly papules in the eyebrows and scalp. I slipped up on the diagnosis. He was so thoroughly convinced of the correctness of his diagnosis that he discontinued his visits to me and passed to the hands of a colleague who put him on antisyphilitic treatment, and those lesions cleared up.

Another was that of a sturdy young nurse attached to one of the hospitals in the city, and temporarily detached to attend a patient under my care. She had a lesion of the tonsil which I failed to recognize as syphiltic. After leaving my case she went back to the hospital. The visiting laryngologist of the hospital (I do not remember his diagnosis) concluded that the tonsil should come out and attempted to remove it by morcellement, under local anesthesia, with the result that a great deal of blood was lost. The lesion returned promptly. She was subsequently placed upon antisyphilitic treatment and the condition cleared up.

Dr. Culver correctly stated that no lesion of the genital organs should be cauterized until the diagnosis is made. This I consider wise judgment. The inference from that statement would lead one to believe that there are lesions which should be cauterized. Cauterizing any lesion on the penis—whether luetic or chancroidal or not—is bad practice, because these conditions may be overcome by other methods and the patient is saved the possibility of a complicating bubo.

Captain H. J. Nichols: One condition has not been mentioned in which the patient has syphilis, and incidentally has an epithelioma or some non-syphilitic ulcer; the Wassermann is taken and found to be positive, but if a section is made the lesion is found to be a true epithelioma.

I remember an instance of an investigator in syphilitic lines, who had a canker sore of the mouth due to some digestive disturbance. He asked me to examine it with the dark field; of course I found nothing. At that time we did not take his Wassermann, but a year or two later his Wassermann was taken and it was found that he was infected, and the examination of the spinal fluid showed that he had been infected for some time. If we had made a Wassermann earlier we might have thought the non-specific ulcer was luetic.

I admire the doctor's attitude toward laboratory reports and diagnoses as compared with the clinical. I think the pendulum is swinging back where it belongs. Clinical medicine is a distinct art in itself and should not be allowed to become obsolete in favor of laboratory findings. The Wassermann reaction certainly is not specific in syphilis any more than the X-ray plate is specific for kidney stone; but it seems to me that people who ignore the value of laboratory aids are even worse off than those who place too much dependence upon them.

Dr. G. C. Macdonald: I have been disappointed in Wassermann reactions. In some cases I have watched cases systematically and treated them intermittently. In the case of a man with true Hunterian chancre, I stop treatment for three months, have a Wassermann examination made with negative results, although clinically the disease is present. I know of a case of a young man in the country now; he went through all the secondaries of syphilis and he has failed to show a positive Wassermann. There is no doubt that he has had syphilis. Although I am not one of those men who put laboratory findings on one side, I would not consider a laboratory finding final unless it coincided with the clinical manifestations.

I did not know that anyone ever cauterized chancres any more. Soft sores can be cured by saturated solution of argyrol. Of course in the case of sloughing phagedena extensive cauterization might become necessary.

Speaking of the skin lesions of syphilis, we know them to be polymorphous. One of my old teachers used to tell me that syphilitic rashes were like cuckoos; they have no nest of their own, but use everybody else's, hence they simulate every other kind of eruption. Syphilitic rashes never itch and have as a rule the typical raw ham appearance.

Speaking of the obscure cases where there has been no primary sore observed, we should remember that probably every fourth gonorrhea is an urethral chancre, and soft sores very often but conceal a true Hunterian chancre which manifests itself by the "soft sore" becoming a hard one on or after the 21st day from infection, the patient having the double event.

Dr. A. S. Keenan: We have heard from the ear specialist, the throat specialist and the G. U. specialist; it may not be amiss to have a word from the general practitioner, because we see cases of syphilis and, judging from the open confessions made here to-night, we make almost as many mistakes. One point that has helped me in diagnosing chronic syphilitic lesions, is that the blood pressure is 10, 15, or 20 points higher in a syphilitic case. While this may not be a very important matter, when you are weighing the pros and cons of a case it helps you a good deal.

We frequently have to fall back upon the therapeutic test in deciding doubtful questions, and it comes to this: if the lesion can resist the point of salivation it is not syphilis, and if it disappears it is syphilis. We often have to give mercury and iodide to clear up those doubtful cases.

Another point that gives the general practitioner a good deal of trouble is the ethical side of the question. It is difficult sometimes to know what to tell a man when you believe, but are not sure, that he has syphilis. I remember a glass blower who came to me with a chancre of the mouth, and he wanted to return and take up his work. That was a few years ago, when each of three men blew twenty minutes on the tube. I told him that he must quit and he said he would not. Finally I told him that if he did not quit I would lay the matter before the Board of Health, and that frightened him, and he promised not to return to work.

I had another one of those doubtful cases, which gave me considerable worry. Recently I confined a woman at the hospital, and it was the custom at that time to have a Wassermann of all the placentas. In this case the Wassermann was positive, and besides there was a history two years previously, of a miscarriage. I told the woman to have her husband come in to see me. He came to my office that evening. He was a big stevedore, and wanted to know what I wanted with him. In as gentle a manner as possible, I told him how the blood examination made on the afterbirth had pointed to syphilis, and that he must have the disease. He became very indignant, stormed up and down the office, threatened to "knock my block off" and made an awful fuss, because I had dared to charge that he had any disease or that his wife had any disease. He had never been ill in his life, and to exemplify his good health, he thumped his chest. I backed water a little, and explained that the Wassermann test of the blood might in some cases be wrong. This retraction only made matters worse. A good workman, he said, knew when his work was right or wrong, and I must be a poor doctor to make such a charge without any evidence. He threatened to sue me and the hospital for making false

charges. The next evening he came to the office, but in a different frame of mind. He was full of apologies and with tears in his eyes, confessed that twenty years before he had had syphilis.

In cases like this, when you are yourself doubtful about the character of the disease, it is a serious matter to charge a person with syphilis, and it is, on the other hand, poor medical treatment to let the case pass without the proper advice. It is in such cases a difficult matter to know what to do, to do right.

Dr. G. D. Culver, closing discussion: The paper did what I wanted it to do—it brought out discussion, and I have enjoyed it and profited by it.

Dr. Welty said that he had not had much trouble in diagnosing early lesions of syphilis, such as mucous patches. It is true that they are not so puzzling. Most of the errors I called attention to were with chancre of the mucous membranes and other ulcerated lesions.

Dr. Graham spoke of the ease of diagnosis of lesions above the neck. I do not agree with him. I have seen sarcoma in the roof of the mouth and syphilis in the roof of the mouth, and the picture—as nearly as I could judge—was exactly the same. I think we are inclined to look upon syphilis as fairly easy to diagnose. It is not. We all make mistakes and we are going to continue to make them. I brought up the subject with the idea of calling attention to a few points that should make us a bit more careful. I do not think we should be misled by any laboratory report, whether positive or negative. You may have to deal with a lesion that is not syphilis, yet get a positive Wassermann, and we must consider that there may have been syphilis before, and the positive Wasserman may be the only indication present.

Dr. Spencer called attention to the fact that it might be inferred that I thought cauterization was a good thing. I do not remember ever having cauterized a chancre. We find that the lesions, no matter what they are, react to other treatment better.

I think chancroids must go to the G. U. men; they are very scarce in my work.

The question of considering any lesion which yields to treatment as syphilis, may get one into trouble. There is a skin condition which resembles syphilis and which yields to the iodides, notably sporotrichosis. We also know that blastomycosis, which may easily be mistaken for syphilis, will improve under the iodides. Not many years ago I saw a case of mycosis fungoides which I was determined was syphilis. Every test was negative, treatment was negative; after following the case for a number of months I came to the conclusion it was mycosis fungoides, and it proved to be that disease.

It is so easy to err in the diagnosis of syphilis, so difficult not to do so, that any discussion such as we have had should be of marked benefit.

THE LATE CORRECTION OF MAL-UNITED FRACTURES OF THE EXTREMITIES.*

By P. S. CAMPICHE, M. D., San Francisco.

The treatment of fractures has received so much attention in the last few years, and the progress made in this branch of surgery has been so great, that it seems as though a bad result should now be a thing of the past; and yet, for reasons to be stated below, it appears that mal-union still occurs in a large number of cases. It goes without saying that the best anatomical and functional result should always be our aim, but this ideal is not attained at all times and the fact remains that even nowadays the primary treatment of many fractures often results in disaster.

The causes for the failures are many; some cases are difficult to diagnose, others present extraordinary obstacles to treatment even in the hands of the best surgeons, while tardy consolidation and anomolies in callus-formation, such as exuberant callus near an articulation or a deficient callus, at times determine an unfavorable result. But in most cases the harm is due to the fact that the fracture has to be treated by a man who does not have adequate facilities for the work, although the doctor is not always the one to blame for embarking in such a risky enterprise; we all know how difficult it is to persuade patients in outlying districts to leave their homes and go to the city for treatment.

To the doctor who admits that he is not properly equipped, the patients, even well-to-do persons who do not need to consider the expense, will answer that they will be satisfied with any kind of a result provided they do not have to leave their homes; this sounds very nice, but the same people who exert such pressure on their physicians and influence them to assume the responsibility for treatment of the case are the first to criticize him mercilessly and even to threaten to sue for damages in the event of a faulty union, and are without any regard for the man who has done his level best under adverse circumstances to please and to help them.

Let us follow the course of a typical case of this kind. By this time six or eight weeks have elapsed since the accident and the failure becomes every day more apparent to the doctor and also to the patient. This is the very time when prompt decision and energetic action are in place to prevent the patient from regarding the result as final and to persuade him that an important correction is still possible and necessary; but, curiously enough, a period of discouragement and inertia sets in during which both the surgeon and the patient seem loath to undertake anything definite, and nothing is done for a long time. To point out that there is still much room for progress in this direction and to call the attention of the medical profession to the great loss of time and working capacity entailed by such a course is the object of this paper.

In cases of this kind that have come to me for final correction I have often noted that four, six, eight, and even ten months have been permitted to elapse after the original injury before a surgical procedure would be proposed and accepted; during all this time the patient remained disabled and in a crippled condition. Many of them were unable to walk, and one, a young lady with a fracture near the elbow, was for months unable to dress alone; this patient had a supra condylar fracture of the humerus combined with posterior displacement of the inferior fragment in such a way that flexion was impossible. This was allowed to continue for four months before she came for an osteotomy of the humerus.

Again, a boy with a simple malleolar fracture was kept in a cast without any attention being

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paid to the equinus position of the foot; for nearly five months he was left to hop around with a bad ankylosis before he was sent for surgical treatment. It was impossible to break the ankylosis even under an anaesthetic, and a resection of the tibio-tarsal joint was necessary in order to restore sufficient motion. In another case a young man was left in a cast with his foot in a marked equinus position and nothing was done until it was finally realized seven months after the accident that he would never walk with that stiff joint.

A man with a fracture of the femur that had healed with great shortening, and also with the left elbow ankylosed in full extension, waited nearly four months before he came for an osteotomy of the femur and an arthroplasty of the elbow. Another man with a false joint, pseudoarthrosis, of the femur, came to me for a bonegraft operation as late as ten months after the accident. These are only a few that I have actually witnessed, but I have heard of many similar occurrences and in some of them the length of time so wasted has been incredibly long.

It is clear that such great delay in resorting to rational surgical treatment results in a prolonged and unnecessary period of total disability as it could nearly always be either avoided or much shortened.

The attitude of insurance companies toward such delays is surprising; the same insurance companies that are very strict with independent surgeons raise no objection when their own men for a relatively simple fracture keep the patient in hospital six, eight, or ten months, or more.

At all events, whatever may be the cause for such great delay in resorting to surgical treatment in this class of cases, whether discouragement, pessimism, or mental inertia, the attitude of the medical profession in relation to further and more active treatment does not seem justified, and is to be deplored. Sad as it is to experience a check in the primary treatment of a fracture, we should never forget that the resources of surgery are great and that the results of secondary orthopedic operations for mal-united fractures especially are very gratifying.

Of course it is always better, if possible, to prevent faulty union; but granting that a bad result could not be avoided and perhaps becomes firmly established, the situation is very much like that of a ship in danger of sinking through some mistake or misfortune due to its officers; even in this extremity it is the duty of the captain, not to remain idle, but to handle his vessel in such a manner as to save as much as possible from the wreck. The surgery of mal-united fractures is also salvage surgery, but it is well worth trying to do. For here also, when everything seems lost and all hope has been abandoned, a well planned orthopedic intervention and judicious after-treatment will often save a surprising amount of function for the patient, and this should be welcome news to a man already in fear that he will remain a cripple.

Another reason why the medical profession should avoid delay and should avail itself promptly of the help of surgery in mal-united fractures arises from the frequent threats of malpractice suits which seem to have become daily occurrences. If the physician after treating a fracture six weeks or two months finds the result unsatisfactory, then temporizes and hesitates several more weeks or months, the patient will gain the impression that the treatment is ended, and realizing eventually that the bad result is a consequence of the treatment, the next thing that will come into his mind will be a suit for damages.

If, on the contrary, the physician himself on recognizing after a few weeks that the result is not good, would declare without any hesitation to the patient that the union is not what it should be, that this occasionally happens in the treatment of fractures, and that the necessary correction can be assured only by an operation, the patient would realize that the treatment was not concluded, that there had been only a delay, and that what must next take place was merely a continuation of the cure. This would immediately shut the door to any intention to start a malpractice suit, for it would be clear that no one could be held responsible for a treatment which had not yet been completed.

Therefore if these cases are recognized early, handled with decision, and submitted promptly to operative intervention, much would be gained for the reputation and peace of mind of the physician attending, as well as for the welfare of the patient. In this field we have at our command many procedures and interventions which can only be mentioned briefly here, such as removal of interposed muscles and fascias, freeing of compressed nerves, osteotomies, bonegraft operations, occasional wiring, and resection or arthroplasty; some one or other of these methods may often sufficiently improve conditions to give the patient a useful limb.

CONCLUSIONS.

1. From circumstances independent of the will of the surgeon, many fractures conscientiously treated by the ordinary methods result in malunion and in impaired function, making necessary some surgical intervention.

2. Owing to undue pessimism and discouragement of both the patient and his attending physician, the time elapsing between the accident and the decision to submit to final operative correction is much too great and often as a rule keeps the patient several months unnecessarily in a condition of total disability.

3. This pessimism is wholly unjustified as the secondary correction of mal-united fractures is yielding very good results and should be resorted to as promptly as possible.

4. If, in cases with a bad result, instead of a long interruption in treatment the necessary correction were immediately recommended at an early date the patient would believe this to be a mere continuance of the cure, and this itself would go a long way to check any idea of starting malpractice proceedings.

PROHIBITION AND THE RETURNED SOLDIER; A WORD OF CAUTION.

Ernest H. Scammell, F. C. I. S., secretary of the Military Hospitals Commission of Canada, recently visited the New York State Department of Health and brought a number of direct and important suggestions which are discussed in the July number of Health News. Inasmuch as we wish to avoid the mistakes of the other warring nations, our readers will be interested in the following excerpt:

"'The problem of the returned soldier,' says Mr. Scammell, 'has been cut in half where prohibition has prevailed.'

"Mr. Scammell points to the general popular desire to 'fill up' the returned soldier. He has done his bit, the theory is, and treating is in order. With a full realization of the seriousness of the problem, even Quebec, which is not one of the dry provinces of Canada, closes its bars at nine o'clock and all day Sunday as a war measure, and prohibits treating altogether. British Columbia is at present the only Canadian province where it is legal to treat the returned soldier.

"So serious was the problem of inebriates among returned soldiers in the earlier years of the war, that the Military Hospitals Commission contemplated starting an inebriates' home. But prohibition and the consequent removal of the trouble made further talk of it unnecessary. In Ontario, indeed, the jail population became so greatly reduced, as a direct result of prohibition, that it was possible for the authorities to take over one reformatory for a convalescent hospital."

Book Reviews

Asthma, presenting an exposition of the non-passive expiration theory. By Orville Harry Brown. 36 engravings. St. Louis. Mosby Co. 1917.

Brown looks upon asthmatic dyspnoea as a mechanical interference with the bronchial blood and lymph circulation due to heightened intra-alveolar tension, this in turn being due to non-passive expiration. Inflammatory processes in the bronchi are usually responsible for most of the swelling found in asthma. Careful observation on 50 cases studied by Brown apparently confirm his theory. Admitting its correctness unfortunately brings us but little nearer our goal, i. e., the relief of our patients. The problems that remain are well stated. The literature has been carefully gone over and the absence of any recent review on this subject gives Brown's work an added value. We would especially urge its perusal by those specialists who still look upon asthma as a disease to be cured by nasal surgery or injections of "soups" made from cosmopolitan bugs.

R. B.

The Surgical Clinics of Chicago, Volume I Number III (June 1917). Octavo of 231 pages, 70 illustrations. Philadelphia and London. W. B. Saunders Company. 1917. Published Bi-monthly. Price per year: Paper $10.00, Cloth $14.00.

Contents.

Pulsion diverticulum of esophagus. Removal Murphy button from stomach 2½ years after gastro-enterostomy. Hernia of diaphragm. Carcinoma of jejunum. Vaginal hysterectomy for carcinoma of cervix uteri. Internal hydrocephalus. Pyloric obstruction following sulphuric acid poisoning. Thrombo-angitis obliterans. Varicocele. Obstinate sciatica. Gunshot wound of skull. Calcaneo-cavus. Local anesthesia for hemorrhoidectomy. Reconstruction of hepatic duct. Pancreatic abscess. Resection stomach for carcimona. Operative and radiotherapeutic treatment of uterine myomas. Perineorrhaphy. Therapeutic abortion and sterilization. Salpingitis. V-shaped hysterectomy for dysmenorrhea and leukorrhea. Treatment of burns with special reference to prevention of deformities. Mediatrinal tumor. Hallux vagus. Regional surgery.

The Medical Clinics of North America. Volume I, Number 1 (The Johns Hopkins Hospital Number, July, 1917). Octavo of 193 pages, 14 illustrations. Philadelphia and London: W. B. Saunders Company, 1917. Published bi-monthly. Price per year: Paper, $10.00; cloth, $14.00.

Contents—Hodgkin's disease with extensive skin eruption. Postural albuminuria. Diabetes with disturbances of external secretion of pancreas in syphilitis. Meningitis of unknown etiology. Atrial fibrillation muscular tissue. Progressive muscular atrophy. Essential hypertension. Dietetic treatment diabetes. Acromegaly. Combined scleroderma, Raynaud's disease and chronic arthritis. Hypertension. Dermoid cyst of mediastinum. Milroy's disease. Gastroptosis. Visceroptosis and chronic appendicitis. Medical after-care of surgical patients after abdominal operations.

Eye, Ear, Nose and Throat. Edited by Wood, Andrews and Shambaugh. Volume III of Practical medicine series for 1917. Chicago: Yearbook Publishers, 1917. Price $1.50.

Contents—Examination of eye. Hygiene of eye. Refraction. Diseases of eyelids, conjunctiva, lachryman apparatus, cornea and sclera, uveal tract. Crystalline lens. Retina and optic nerve. Ocular muscles. Toxic ambylopia. Glaucoma. Eyeball and orbit. General diseases and ocular symptoms. Injuries. Military surgery of eye. Ocular therapeutics. New instruments. Comparative ophthalmology. Middle ear. Internal ear. Septum and sinuses. Mouth. Tongue. Pharynx. Adenoids and tonsils. Endoscopy of bronchi and esophagus. Bronchi and trachea. Larynx.

Experimental Pharmacology. By Dennis E. Jackson. St. Louis. Mosby Co. 1917.

It is only the exceptional man who can give out again what he has learned—who can remember all the details that bothered him when he was a student. Dr. Jackson has produced a book so richly illustrated and so full of detail that it must always be an ideal one for students, and for instructors taking charge of laboratory courses in pharmacology. One has only to turn over the pages of this book to see how rapidly pharmacology is taking its place amongst the exact sciences.

The only criticism that we would make, and we believe it is a serious one, is that in drawing the many excellent illustrations the artist seems to have forgotten entirely that there are such things as anti-vivisectionists. There are a large number of drawings of dogs which do not show the method of anesthesia. Others do not show clearly that they are dissections, and all could easily be used by the antis with telling effect. To be sure, the anti-vivisectionists would think nothing of redrawing the illustrations with an ether mask erased, but it is flying in the face of Providence to give them twenty or thirty figures that do not need retouching. Besides, these plates show experiments not for original research but for class instruction. According to the antis these are useless and doubly objectionable. This book may undo much of the work done by those who are trying to protect medical research. Everyone who reports the results of animal experiments must keep constantly in mind the possibility that his paper will be read not only by those who accept as a matter of course that anesthesia was used, but by others who will gladly misconstrue his words, and use them to damn all research workers.

W. C. A.

Correspondence

Automobile Coupons.

To the Editor: It has come to our notice that a number of physicians have not signed the automobile coupons carried in the Journal, for fear the office will be over-crowded with zealous automobile salesmen. In order to overcome this and get the greatest amount of good for the Society, we beg to advise you that we will give the name of a prospective customer to but one agency. By this means it is possible to assist us in securing some very profitable advertisements for the Journal at a minimum amount of inconvenience to yourself.

If you have not signed one of these coupons, please do so at once.

Cordially yours,
R. E. BERING,
THOS. E. SHUMATE.

Medical Military Matters in California.

To the Editor:

The situation in California is progressing in regard to its response to the call for medical officers in the army. Up to the first of September 533 surgeons, or 9.4% of the medical population of the State, had been recommended for appointment in the Medical Officers' Reserve Corps. According to the calculation, however, California's quota for the 20,000 medical officers needed would be 800, so that it still has 260 odd men to supply. These must come from those who are less than 55 years old, have no imperative obligation (such as the charge of an isolated community or necessary work in hospital or medical school or in sanitation), who are able to arrange for the care of their dependents or who have an income apart from their professional income, which will support their dependents.

That these should be gotten by a selective draft inside of the medical profession has been urged and agitated by New York and North Carolina especially, the former State having worked out a very elaborate plan by which, inside the profession, this draft could be conducted, and the interests, first of the country, secondly of the community, and thirdly of the family and individual, could be considered with the least wastage of men and of effort. Inasmuch, however, as the voluntary enrollment and acceptance of commissions was going on satisfactorily to the Surgeon-General, so that he had already commissioned enough men to care for an army of a million and enough more recommended for commissions to care for 700,000 more (these numbers may not be strictly accurate at the date of publication), he objected to anything like a selective draft of medical officers.

In each state, in each county, then, it will be necessary for the men who are still needed to be selected personally, and this, which is the suggestion finally made by the Southern Medical Association, of which Dr. Joseph C. Bloodgood of Baltimore is chairman of the Committee on Medical Preparedness, is the plan which had been already adopted in this state, and towards which the California State Committee of National Defense (Medical Section) has been working.

The subject which has been of such great interest in the last few days, particularly since the Selective Service law put the selective draft into operation, viz: the exemption of medical students, hospital interns, and young medical men from the action of the law, has finally been settled by the President by the issuance of supplemental regulations governing the execution of the Selective Service law. (Editor,—See Department of Military News.) It is very satisfactory that a way so definite can be found out of the dilemma in which those who drafted the law found themselves, for they acknowledged from the very beginning the necessity of exempting from service in the ranks the medical man, who represents the highest development at the greatest cost through the longest time of a professional individual, also the partially educated physician in his student days, as the alternative would be an obvious extravagance of a specialized individual. But they did not dare put into the law any clause exempting any one class, lest they should open a way for other clauses exempting other classes which did not have any equal claim to exemption.

Very truly,
(Signed) HARRY M SHERMAN, M. D.
Sept. 13, 1917. San Francisco.

State Society

IMPORTANT NOTICE—INDEMNITY DEFENSE FUND.

Notes are now becoming due.

Do not let your membership lapse.

Each member will be informed ten days in advance of the due date of his note.

Medical Defense Rules, Section 3: "Dues must be paid to the Secretary of the County Medical Society to which each member belongs prior to the end of February of each year. Any member whose dues are not paid prior to March 1st and whose name is not reported as having paid his dues by the Secretary of his County Medical Society is dropped from the list of members in good standing as of January 1st of such year, and such member is deprived of Medical Defense afforded by the State Society for the period from January 1st of such year to the date when his assessment is received by the State Society. Members whose assessments are not received on or before February 15th of each year will be notified by letter from the Secretary of the State Society of such fact."

PUBLICATION COMMITTEE MEETING.

5 P. M., September 4, 1917.

Present—Drs. Ewer, Hyman and Reed.

The following matters were discussed and constructive plans outlined for advancing them:

1. Development of the news features of the Journal.
2. Preparation of special investigation of certain advertising doctors, newspaper medical advertisements, and medical commercialism.
3. Special publicity and support for the State Board of Medical Examiners.
4. Introduction of joke column in advertising pages.
5. Continuation of department of pharmacy and chemistry on a basis of supplying practical technical matter from the pharmaceutical field for the practicing doctor.

Suggestions for Readers of Papers.

The Committee on Scientific Work of the State Medical Society, is planning for the meeting of April, 1918, at Del Monte, and some papers are now in the course of preparation. For the benefit of those who are contemplating reading papers, the following suggestions are offered in the belief that by observing the same there will be more time provided for the discussions, and the program will work more smoothly. The writer is indebted to Dr. Harry M. Sherman, past president of the society for this idea.

Remember that one page of double-spaced typewritten copy contains about three hundred words. To be heard and understood by all, a speed of

not more than one hundred and fifty words per minute is the most satisfactory. A ten minute paper then would contain about fifteen hundred words. To save time one should avoid reading long historical prefaces, and references to published papers, unless absolutely necessary to introduce the subject. Lengthy papers had better be condensed for reading and later published in full.

It is desirable to make every endeavor to limit the length of the papers because the program is usually filled weeks before the meeting and excellent papers which are received too late must be crowded out. The Society has grown so large that it has been necessary to divide it into sections. Even with this arrangement it has been found that the meeting hours at our disposal have not been sufficient to accommodate all of the good papers offered the committee. The members desiring to read papers therefore are advised to write to the committee as early as possible, and to condense their articles. The Committee on Scientific Work consists of Harry E. Alderson, chairman; R. A. Peers, secretary; Fitch Mattison and Walter Brem.

(Signed) H. E. ALDERSON.

A great number of physicians, who have enlisted for service during the present war, are embarrassed by unexpired leases, corporations from whom they rent having refused to cancel leases. When physicians are so much needed in the United States Army, every effort should be made to relieve them of contracts rightfully binding in times of peace, but which might better be waived in times of national peril. It is requested that all such cases be reported to Physicians' Lease Committee of the Chicago Rotary Club, which desires to create a strong public opinion favoring the canceling of leases in such cases. If advisable, the matter can be carried for consideration to Congress.

Preparation for an intensive campaign to prevent the spread of tuberculosis in the American Army and among those rejected by the draft will be the theme of the Southwestern Sectional Conference of the National Association for the Study and Prevention of Tuberculosis, to be held at the Grand Canyon of Arizona, on October 22nd and 23rd. Final details will also be discussed for carrying on the Red Cross Christmas Seal campaign, from which it is hoped to raise the $3,000,000 necessary for this war work.

The topics considered during the two days' sessions will constitute throughout a unified war program. How to provide adequate care for the thousands of men who will be rejected for the army because of tuberculosis or suspected tuberculosis, or who will be discharged because of this disease before the new army is sent overseas or after it is in France, will form the burden of the conference. Prominent authorities on tuberculosis from this section of the country will be among the speakers.

The first meeting will be a general medical session devoted to the method of discovering tuberculosis in war times, including a discussion of just what constitutes a diagnosis of tuberculosis sufficient for rejection from the army. At the general meeting following this session, the facts and figures in reference to tuberculosis as a war problem will be brought out, together with the machinery available and needed to meet it. This will be followed by round table discussion by nurses, health officers and state and local secretaries.

The Southwestern District includes the states of California, Arizona, New Mexico, Texas, Colorado, Oklahoma and Nevada. The officers of the conference are: President, Dr. W. Jarvis Barlow, Los Angeles, Cal.; vice-presidents, Dr. John W. Flinn, Prescott, Ariz.; Dr. E. S. Bullock, Silver City, N. M.; Dr. Robert A. Peers, Colfax, Cal.; Dr. Theodore Y. Hull, San Antonio, Tex.; Dr. G. W. Holden, Denver, Colo.; Mr. E. K. Gaylord, Oklahoma City, Okla.; Hon. A. E. Cheney, Reno, Nev.; secretary, John Tombs, Albuquerque, N. M.

Plans have been completed by the American Red Cross and The National Association for the Study and Prevention of Tuberculosis for the opening of the 1917 Red Cross Christmas Seal Sale about November 20, continuing up to January 1. The campaign will seek to raise at least $3,000,000 for the anti-tuberculosis movement in the United States, or more than double the returns in any previous year. The war has made it imperative that every possible facility for the care of consumptives be enlarged. Attention is called to the fact that the examination of 10,000,000 men subject to the draft, besides thousands of others who are enlisting voluntarily, has already and will continue to disclose thousands of new cases of tuberculosis, which have hitherto been unsuspected.

The money raised from the sale of Red Cross Seals will be distributed throughout the United States and most of it will remain in the communities where the Seals are sold. In every state, however, it is planned to establish a special war fund, to provide immediate facilities for discharged recruits and soldiers.

County Society News

FRESNO COUNTY.

Dr. Harold P. Hare, son of Dr. G. A. Hare, 815 McKinley avenue, and a medical graduate of the University of California, has received a commission as lieutenant in the naval reserve, and is ordered to Mare Island.

Dr. Hare is widely known in Fresno. For the past few months he has been associated with his father, and prior to that served as interne in the University of California hospital.

Dr. Kenneth Staniford has been commissioned lieutenant in the army medical corps and is ordered to the training camp at American Lake, Washington. Warren Paul Staniford, brother of Dr. Staniford, has received his commission as second lieutenant, and will also be stationed at American Lake.

RIVERSIDE COUNTY.

Drs. Bon. O. Adams, Arthur L. Brown and W. D. Rolph, Riverside physicians, have received their commissions in the sanitary corps, U. S. army, and are here under indefinite leave awaiting call to service. Dr. Adams has been appointed captain and Drs. Brown and Rolph are commissioned lieutenants.

Dr. Adams has served three years in the national guard, state of Colorado. His work will consist of medical duties and problems of camp sanitation for the greater portion of a regiment. He will have charge of some ten sanitary units. Lieutenants Brown and Rolph will each be in charge of a sanitary unit and will have 32 men and women nurses and orderlies under their jurisdiction.

SAN FRANCISCO COUNTY.

Proceedings of County Medical Society.

During the month of August, 1917, the following meetings were held:

Tuesday, August 7th, Section on Medicine.

1. Demonstration of a case of Perthes' disease.—G. S. Wrinkle.
2. Rectal hemorrhage.—A. J. Zobel.
3. The syndrome of mild reverse peristalsis.—W. C. Alvarez.

Tuesday, August 14th, St. Francis Hospital Clinical Evening.

1. Orthopedic problems; demonstrations.—C. C. Crane.
2. Cholesterin content of the blood in the diagnosis of gallstones.—M. V. Kramolin.
3. Syphilis of the stomach.—M. P. Burnham.

Tuesday, August 21st, Section on Surgery.

1. The prevention and treatment of localized muscular contractures.—A. Gottlieb.
2. Traumatic luxation of the sacro-iliac symphysis without fracture of the pelvis.—J. A. Simpson.
3. Management of the surgical risk in urologic surgery.—Frank Hinman.

Tuesday, August 28th, Section on Eye, Ear, Nose and Throat.

1. Demonstration of Cases.
   (a) Radical operation for improvement of hearing in a perfectly dry ear.—Cullen F. Welty.
   (b) Bilateral congenital buphthalmos.—Roderic O'Connor.
2. Review of glaucoma.——Edward F. Glaser
3. The medical treatment of non-inflammatory glaucoma and when to operate.—Hans Barkan.
4. Corneoscleral trephining in non-inflammatory glaucoma.—Kaspar Pischel.
5. The surgical treatment of glaucoma.—William Ford Blake.

Shortly after the declaration of war a number of enthusiastic members of the Masonic fraternity conceived the idea of entering the service of the United States Army in some branch of the service where they could all be together. It was found that this opportunity was available only by entering the ambulance service through the American Red Cross, and steps were taken along that line, the Corps to consist of five doctors and one hundred and nineteen men. Dr. R. Cadwallader of San Francisco was given a captain's commission and placed in charge of the company when it left the city for active training, preliminary to being sent to the front in France. The Masonic ambulance corps reached the mobilization camp at American Lake, Wash., on August 4th. The other doctors that accompanied the corps as first lieutenants are Dr. S. R. Berry, Dr. E. L. Doane of Oakland and Dr. R. A. Babcock of Willits. This is the first complete company leaving San Francisco, and also is the first enlistment of a unit where the members were almost all sworn into the service before its officers were chosen. The work of enlistment and equipment was done by the Masonic Club at the Palace Hotel.

SANTA BARBARA.

Dr. Phillip S. Chancellor of this city is to be chief of the medical service in a 1000-bed hospital to be erected in Mobilization Camp Kearney at Linda Vista. Dr. Chancellor was to report September 1st. His position carries the rank of major and the appointment cancels a call to service as medical director of a 500-bed base hospital which is being organized in San Francisco. Dr. Chancellor accepted the call to the San Francisco hospital some time ago and with it he would have received the rank of senior captain.

Military News

Exemption of Medical Students and Interns.

Interns and students who shall not have been called by a local board may enlist in the Medical Enlisted Reserve Corps, such enlistment entitling them to discharge from draft if thereafter called.

An application for enlistment under this paragraph must be forwarded to the Surgeon-General with the affidavit of the applicant, supported by the certificates of his school authorities, showing his present status as intern or student, and particularly how long he has been an intern in the one case, or the year of the medical course that he is pursuing in the other.

An intern who has served one year or more as such will not be enlisted in the Medical Enlisted Reserve Corps under this regulation.

An intern who is enlisted in the Medical Enlisted Reserve Corps hereunder will be called into active service under his enlistment, if his services are needed, at the end of one year of internship. Applications for commission in the Medical Reserve Corps, from interns who at the expiration of one year's internship are called for duty as members of the Medical Enlisted Reserve Corps, or from interns whose year of internship is about to expire, will receive proper consideration.

A medical student (undergraduate) who is enlisted in the Medical Enlisted Reserve Corps hereunder will be called into active service under his enlistment, if his services are needed, on failing to pass from one class to another, or on failing to graduate.

Interns and students who shall have been called for service by a local board under the selective draft law, may be discharged from the draft, on condition that they shall enlist in the Medical Enlisted Reserve Corps.

It will be the policy of the Surgeon-General as a rule to recommend discharge from the draft on the condition indicated, the discharge to be followed by a call to active duty under the enlistment in the Medical Enlisted Reserve Corps at the expiration of a complete year of internship or on the failure of the student (undergraduate) to pass to the next higher class or to graduate.

Interns and students who are enlisted in the Medical Enlisted Reserve Corps by virtue of these regulations, and are not called into active service under such enlistments, are required to report their status to the Surgeon-General as follows:

Interns, at the end of each three months' period, such report to show the total amount of internship since graduation, and to be countersigned and attested by the medical superintendent of the hospital.

Students, at the end of each semester, such reports to show whether the students qualified for advancement, and to be countersigned by the deans of their respective schools or by subordinate officers representing the deans.

In the execution of these regulations the department will not recognize internships in hospitals, sanatoriums or other institutions conducted for profit, or in small private hospitals (fifty beds or less), or new internships established or added since May 18, 1917, to those previously existing, at any hospital, excepting such as may have been newly established and added by reason of a proportional increase in the bed capacity of such hospital; nor will it recognize internships in the case of any graduate appointed thereto later than August 1 following his graduation.

Medical Reserve Corps of the Army.

The subcommittee on ophthalmology and otolaryngology refers to the following:

1. Officers of the Medical Reserve Corps who have specialized in medicine or surgery will be given an opportunity to perform the duties of their specialty when feasible, men of larger experience naturally being given preference.

2. In the Medical Reserve Corps there are three grades, viz, lieutenant, captain, and major. It is the policy of the Surgeon General's Office to recommend the great majority of applicants for commission in the grade of first lieutenant, with the expectation of making numerous promotions when the officers concerned have had an opportunity to demonstrate their professional qualifications and their adaptability to the military service after a reasonable period of active duty. Applications for increased grade are not favorably considered unless they come through military channels, in order that the Surgeon General may have the benefit of the recommendations made by the applicant's superior officers. Political influence is unnecessary.

In making recommendations for original commission age, professional attainments, and previous military experience are the chief considerations in determining the grade in which the applicant should be commissioned.

3. The pay of the different grades is: First lieutenant, $2,000; captain, $2,400; major, $3,000.

When assigned to duty in a city (not in camp, thus not serving with troops) the assignment carries with it commutation of quarters: First lieutenant, three rooms; captain, four rooms; major, five rooms; at $12 per room, heat and light additional.

4. Acceptance of a commission in the Medical Reserve Corps automatically places your services at the disposal of the Surgeon General wherever he deems them most valuable, either in the United States or abroad.

5. Acceptance of commission is for five years, unless sooner relieved from active duty on recommendation of the Surgeon General, when officers will be placed on the inactive list. Active duty in the present instance will naturally be for the length of the war plus four months, which will be required for the necessary physical examinations to be made of the men before they are discharged from the Army. The old requirement of three years' service including at least 90 days' active service before being eligible for promotion, has been eliminated.

6. In case of death from causes in line of duty, the Government pays to the widow or designated beneficiary six months' pay of the grade held by the deceased at the time of death. The deceased's family is also entitled to a pension.

7. The limited number of quarters at the majority of stations and camps makes it inadvisable for officers of the Reserve Corps to be accompanied by their families unless they can provide for them independently.

8. In no event will the families of officers be allowed to accompany them abroad.

9. Officers in the Medical Reserve Corps under the age of 45 years will be called for training in the medical officers' training camps. This is for the purpose of giving intensive training in administrative duties, a requirement for military service. Men over 45 years, if they so elect, may attend a medical officers' training camp. If a surgeon has had military training, he may be called, without camp instruction, for active duty.

The following paragraphs are added from a letter from the Surgeon General to the chairman of the State committees of the medical section, Council of National Defense:

"1. It is believed that it would be of great advantage to this department if each State committee would make a census of its State, with a view of dividing the medical profession into two classes: (a) those who can not be spared for Army service because of their importance to the civil community, and (b) those who can be spared. Class (a) should be requested to refrain from offering their services. Class (b), on the contrary, should be encouraged promptly to apply for appointment. This office is frequently called upon to give advice along these lines in individual cases, but the department does not care to assume this responsibility, believing as it does that the question is one that can much better be decided by the State committee, acting in conjunction with the county committees.

"2. The department will not feel called upon to consult the list prepared under paragraph 1 when individual applications are received, since it will be assumed in all cases that the individual offering himself can be spared and will be at the disposal of the department for such duty as the exigencies of the service may demand.

"3. For the purpose of this census the State committee should act as a clearing house for the county committees.

"4. Frequently inquiries are made as to whether a medical officer will be assigned to duty in accordance with his medical specialty. In this connection attention is invited to the fact that a large proportion of the administrative work of the Medical Department of the newly organized Army will fall upon the officers of the Medical Reserve Corps. The officers of the regular establishment are so few in number that they will be available for only the most important administrative positions. With this in mind, it will be readily understood that officers of the Reserve Corps must largely supplement their technical knowledge by a clear conception of military co-ordination and administration before they can be of the greatest service to the department.

"5. They should offer themselves without reservation, considering their medical training as the basis upon which to build their education as medical officers.

"6. It is true, nevertheless, that all officers of the Reserve Corps are card indexed according to their special qualifications and that when the Army is fully organized and working smoothly every effort will be made to assign each officer where his special qualifications will be most useful to the Government and where the work will be congenial to the officer himself.

"7. The department has at its command at present only about one-fourth the number of officers that will be required for an Army of 2,000,000 men. By the application of the selective draft the full quota can probably be raised without great difficulty. It will be more creditable to the profession, however, to attain this end by voluntary offer of service.

"8. A great deal of inconvenience has been caused those applying for appointment in the Medical Reserve Corps by reason of the delay in issuing commissions. The business of the War Department has expanded so rapidly that it has been impossible to secure the necessary additional assistance required to handle the work. The delay has occurred in this office as well as in the office of the Adjutant General. This condition is being remedied as fast as circumstances permit."

New Alignment of Medical and Surgical Service.

The physical disasters which the present war occasions are more severe and more specialized than those of any other war of which history makes record. In order that these disasters be mitigated and checked, it is evident that there must be a new alignment of medical and surgical service. The men who fight have a right to expect that the physical distress which such combat entails shall be alleviated by means as scientifical-

ly accurate as those which can be commanded by the civil population.

To this problem the Surgeon General has addressed himself, and, with the sympathetic interest and support of the medical section of the Council of National Defense, has authorized, as one of the many means to be employed in this regard, the formation of units devoted to the surgery of the head, to wit, the surgery of the brain; the surgery of the eye; the surgery of the ear, nose, throat; and the surgery of the mouth.

The justification of the organization of such units resides in the fact that their component parts represent special departments of surgery which in recent years have made such notable advances that their practice, conducted by those who are trained along these special lines, has become an essential part of the scheme of general medical neurological and surgical work, and especially of military surgery in the widest acceptation of that term. They are gathered thus into one unit because they represent a natural selection, each supplementing and aiding the other in an effort to restore the individual to physical well-being.

More than this, they lend to the departments of general surgery, of general medicine, and of neurology a refinement and precision in diagnosis which in many problems is the essential forerunner of satisfying medicinal and operative therapeutic results. The vital necessity of opthalmoscopic examination by the opthalmologist in the work of the brain surgeon; the need of prompt release by the brain surgeon of increased intracranial pressure to save eyesight; the value of expert examination of the ears by the trained otologist in the elucidation of the problems of neurology and cerebral surgery; the need of search by the expert rhinologist and oral surgeon for foci of infection in the accessory sinuses, the tonsillar tissues, and the dental areas—in short, the investigation of what has aptly been called the entire cephalic mucous membrane—are so well known that it is useless to elaborate the catalogue or further emphasize the facts. For years this type of specialized and expert work has been at the disposal of the practice of medicine and surgery in civil life; for the first time in history it has become an integral part of the practice of military medicine and surgery.

Evidently the service of such specialized surgery as has been described may proceed along three lines:

1. Immediate service, or what is ordinarily known as first aid, to be given at the first dressing station. Time is of vital importance in dealing with many head injuries, involving lesions of its special organs, notably of the eye, and many eyes have been saved which otherwise would have been lost where it has been possible to act at once. As to the accuracy of this statement, all eye surgeons who have been at the front, will testify.

2. Later service in the base hospital where all operative procedures of these types of special surgery can be brought into deliberate action. The triumphs of oral surgery in particular are matters of common knowledge and of scientific record, and the same is true of the procedures of cerebral surgery and of those of the eye and ear.

3. Final service in special hospitals devoted to reconstruction and reeducation. In such hospitals the work of the department of the surgery of the head will find and has found one of its widest and most important fields of action, not only in individual work but in the work devoted to those who must be trained for special duties in these regards. For the purpose of making a personnel available for the tasks which have been briefly outlined, a committee has been formed which has mobilized the material according to the plans which follow.

Military Orthopedics.

The very large percentage of the casualties of the present war which require special orthopedic methods in their treatment (from 30—40%) and the large percentage of these cases, when so treated, that can be restored to military usefulness (from 70—75%) has led the Surgeon General to create an organization to care for these cases. This will be designated the department for military orthopedics and will have to do with the work that is required both at home and abroad.

Maj. Elliot G. Brackett, Medical Reserve Corps, has been appointed director of military orthopedics, with headquarters at the Surgeon General's Office.

Maj. David Silver, Medical Reserve Corps, has been appointed assistant director of military orthopedics, with the same headquarters as the director.

For the expeditionary forces, while the work will be under the authority of the director, nevertheless so much special organization will be required that the office of director of military orthopedics for the expeditionary forces has been created, and Maj. Joel E. Goldthwait, Medical Reserve Corps, has been appointed to fill that position.

Associated with him and to serve as assistant directors, Maj. Robert B. Osgood, now serving with United States Base Hospital No. 5, and Capt. Nathaniel Allison, now serving with United States Base Hospital No. 21, will be transferred from their present positions to this department. Maj. Osgood will be temporarily assigned to Col. Robert Jones, the director of military orthopedics for the British forces, for the study of details of organization and methods of treatment, and Capt. Allison will be temporarily assigned to similar study with the French and Italian forces.

For the assistance of the directors, an advisory orthopedic board has been created and is made up as follows: Dr. Robert W. Lovett, Boston, Mass.; Dr. Albert F. Freiberg, Cincinnati, Ohio; Dr. G. Gwillym Davis, Philadelphia, Pa.; Dr. F. H. Alber, New York, N. Y.; and Dr. John L. Porter, Chicago, Ill.

The classifications adopted, of the conditions to be considered orthopedic, is practically the same as that in use by the British Government, and is as follows:

(a) Derangements and disabilities of joints, including anchylosis.

(b) Deformities and disabilities of the feet, such as hallux valgus, hallux rigidus, hammer toes, metatarsalgia, painful heels, flat or claw feet.

(c) Malunited or ununited fractures.

(d) Injuries to ligaments, muscles, and tendons.

(e) Cases requiring tendon transplantations or other treatment for irreparable destruction of nerves.

(f) Nerve injuries, complicated with fractures or stiffness of joints.

(g) Cases requiring surgical appliances, including artificial limbs.

Since prescribed and regulated work is one of the most valuable therapeutic agencies that is in use in the great orthopedic hospitals abroad, the development of the so-called curative workshop is a natural part of the general orthopedic equipment, and since the reeducation and training for industry is a natural development of this, a special advisory committee, to be called the Active Vocational Board, has been appointed and is as follows: Dr. Royal Meeker, labor; Dr. David Edsall, medico-vocational; Mr. John E. Wilder, industrial and employment; Mr. Charles E. Stone, industrial and employment, and Dr. Dean Lewis, general surgery.

Committee of Women Physicians.

By way of further recognition of women in the work of prosecuting the war the Council of National Defense has added to the general medical board a committee of women physicians, of which Dr. Rosalie Slaughter Morton, of New York City, has been appointed chairman.

Need for utilizing the services of women physicians of the country has been more and more apparent to the council, as it is felt they can accomplish much in the way of anaesthesia laboratory work and sanitation. The medical board at present is engaged in formulating plans under which the new committee is to operate, and it is expected that these will be completed within a very short time.

The other members of the committee are Drs. Caroline M. Purnell, Caroline Towles, Florence N. Ward, Mary Lapham, Emma B. Culbertson, Cornelia C. Brant, and Marion Craig Potter.

PROVISIONAL SANITARY TRAIN.

The personnel of the officers of the Provisional Sanitary Trains at the Presidio is as follows:

Field Hospital No. 11—Captain H. H. Sharpe, Director of train; Major Eugene S. Kilgore, commanding; Captain Fred D. Fairchild, enlisted personnel; Captain Herlwyn R. Greene, Capain Robert K. Hutchings, Captain Gilbert M. Barrett, Captain Frank D. Dickson, Captain Gustav J. Bergener, Captain Harry E. Clay, Captain Sidney E. D. Pinninger, Captain Bon O. Adams, Major Alanson Weeks.

Field Hospital "A"—Captain Frederick W. Townsend, Lieutenant George K. Herzog, Lieutenant William L. Moore, Lieutenant George M. Hubbell, Lieutenant Glover B. Wilcox, Lieutenant H. M. Fine, Lieutenant Chas. H. Freeman, Lieutenant O. Andersen.

Field Hospital "C"—Captain Charles Cross, commanding; Lieutenant Frank P. McManus, Lieutenant Jay M. Read, Lieutenant John L. Beard, Lieutenant Pleasant A. Taylor, Lieutenant N. P. Barbour.

Ambulance Co. No. 2—Lieutenant Samuel R. Norris, commanding; Lieutenant Lionel D. Prince, Lieutenant Harry E. Foster, Lieutenant Frank N. Stiles, Lieutenant Luther M. Leisenring, Lieutenant John Boyer, Lieutenant Chas. Adams.

Ambulance Co. "A"—Captain Frederick W. Kroll, commanding; Lieutenant Robert K. Hackett, Lieutenant Michel Etcheverry, Lieutenant Lafayette Wilson, Lieutenant Charles E. Mordoff.

Ambulance Co. "C"—First Lieutenant Cyril E. Lewis, commanding; First Lieutenant John George Harrington, First Lieutenant Ezra R. Bridge, First Lieutenant Frank S. Cook, First Lieutenant John E. Best, First Lieutenant Henry Ehlers.

Post-Graduate School.

A post-graduate school for naval surgeons has been established at the Lane Hospital, San Francisco. The faculty is composed entirely of naval surgeons and is as follows: Surgeon George Rothganger, U. S. N. (Ret.); Passed Asst. Surgeons F. M. Shook, U. S. N. (Ret.); R. G. Brodrick, U. S. N. (Ret.); Hans Barkan, U. S. N. R. F.; W. W. Boardman, U. S. N. R. F.; W. F. Schaller, U S. N. R. F.; Assistant Surgeons A. C. Reed, U. S. N. R. F.; George Barnett, U. S. N. R. F.; Chief Pharmacist's Mate Wm. Meehan (Instructor in Drills).

The course of study includes special training in naval medicine, surgery, hygiene, specialties and drills, and lasts over a period of six weeks. The first session closed on September 5th, and was attended by twenty-one Assistant Surgeons. A second session began Monday, September 10th, and is attended by sixteen more naval medical officers.

Brain Surgeons.

For the purpose of discussing problems of brain surgery, the joint committee of opthalmology and oto-laryngology held a conference July 14, 1917, room 312, Munsey Building, Dr. C. W. Richardson presiding. In addition to the members of the committee, there were present, by invitation, Dr. Dean De Witt Lewis, of Chicago; Dr. Charles H. Frazier, of Philadelphia; and Dr. Charles A. Elsberg, of New York.

At this conference a general plan of organization of the brain surgery section was discussed. District boards were established by the selection of a prominent surgeon and neurologist for districts of one or more States throughout the Union. A circular letter has been sent to members of these boards soliciting their co-operation and requesting names of surgeons in their districts capable of doing brain surgery.

A tentative plan was outlined for the establishment of schools for the instruction of surgeons classified in the brain surgery section. If necessary, these schools can be established in Chicago, Baltimore, Philadelphia, and New York. In each instance they can be directed by an eminent brain surgeon and a large amount of material for instruction will be available. The course will be arranged along an anatomical, clinical, and operative line and will extend over a period of from four to six weeks.

Internes and Medical May Join the Enlisted Reserve Corps and Be Discharged by Local Board from Service in the National Army.

The Provost Marshal General has sent the following to governors of all States:

The President prescribes the following Suplemental Regulations governing the execution of the selective-service law.

First. Hospital internes who are graduates of well-recognized medical schools or medical students in their fourth, third or second year in any well-recognized medical school who have not been called by a local board may enlist in the Enlisted Reserve Corps provided for by section 55 of the national defense act under regulations to be issued by the Surgeon General, and if they are thereafter called by a local board they may be discharged on proper claim presented on the ground that they are in the military service of the United States.

Second. A hospital interne who is a graduate of a well-recognized medical school or a medical student in his fourth, third, or second year in any well-recognized medical school, who has been called by a local board and physically examined and accepted and by or in behalf of whom no claim for exemption or discharge is pending, and who has not been ordered to military duty, may apply to the Surgeon General of the Army to be ordered to report at once to a local board for military duty and thus be inducted into the military service of the United States, immediately thereupon to be discharged from the National Army for the purpose of enlisting in the Enlisted Reserve Corps of the Medical Department. With every such request must be enclosed a copy of the order of the local board calling him to report for physical examination (Form 103), affidavit evidence of the status of the applicant as a medical student or interne and an engagement to enlist in the Enlisted Reserve Corps of the Medical Department.

Upon receipt of such application with the named inclosures the Surgeon General will forward the case to The Adjutant General with his recommendations. Thereupon The Adjutant General may issue an order to such interne or medical student to report to his local board for military duty on a specified date, in person or by mail or telegraph, as seems most desirable. This order may issue regardless of the person's order of liability for military service. From and after the date so specified such person shall be in the military service of the United States. He shall not be sent by the local board to a mobiliza-

tion camp, but shall remain awaiting the orders of The Adjutant General of the Army. The Adjutant General may forthwith issue an order discharging such person from the military service for the convenience of the Government.

Three official copies of the discharge order should be sent at once by The Adjutant General to the local board. Upon receipt of these orders the local board should enter the name of the man discharged on Form 164A and forward Form 164A, together with two of the certified copies of the order of discharge, to the mobilization camp to which it furnishes men. The authorities at the mobilization camp will make the necessary entries to complete Form 164A, and will thereupon give the local board credit on its net quota for one drafted man.

The American Ambulance Hospital has become the first American military hospital in France, and by action of its board of directors in Paris, is hereafter to be administered by the United States Army under the immediate supervision of the American Red Cross. It will be known as the American Military Hospital.

Notice

The following pamphlets may be obtained, post prepaid, at the price indicated from the American Medical Association, 535 North Dearborn street, Chicago, Ill. Every doctor should have a full set and circulate them as widely as possible.

"Nostrums and Quackery" (Second Edition).

For some years the Journal of the American Medical Association has published articles dealing with quackery and the "patent medicine" evil. While the claims and methods of the medical fakirs have been investigated and exposed by the Journal, the Association's chemists have analyzed the various preparations put out by these concerns and thus made plain the speciousness of their claims. All this and much additional matter has been brought together, elaborated and freely illustrated to make the book "Nostrums and Quackery," which is issued in a permanent and attractive form, bound in green cloth, stamped in gold. More than 700 pages; over 300 illustrations. Price, $1.00.

"The Great American Fraud," by Samuel Hopkins Adams. (Fifth enlarged edition.) Price, paper cover, 25 cents; cloth cover, 50 cents.

"Cancer Cure" Frauds. Illustrated; 6 cents.

"Consumption Cures." Illustrated; price 20 cents.

Convictions under the Food and Drugs Act. Illustrated; price 15 cents.

Cosmetic Nostrums. Illustrated; price 10 cents.

"Deafness Cures." Illustrated; price 10 cents.

"Epilepsy Cures." Illustrated; price 10 cents.

"Female Weakness Cures." Illustrated; 15 cents.

Medical Institutes. Illustrated; price 20 cents.

Medical Mail-Order Frauds. Illustrated; price 10 cents.

"Men's Specialists." Illustrated; price 10 cents.

Miscellaneous Nostrums. Illustrated; price 15 cents.

Nostrums for Kidney Disease and Diabetes. Illustrated; price 10 cents.

"Obesity Cures." Illustrated; 10 cents.

Sanatogen. Illustrated; price 10 cents.

Some Quasi-Medical Institutions. Illustrated; price 10 cents.

Some Mechanical Cure-Alls. Illustrated; price 10 cents.

Some Miscellaneous "Specialists." Illustrated; price 10 cents.

"At the Bar of Public Opinion." Price 10 cents. This is a collection of quoted opinions from newspapers and magazines on the subject of the nostrum evil and quackery. The criticisms, coming from sources which might be financially benefited if they kept silent, are of particular interest.

New booklet, "The Production of Pure Milk," containing the milk law with new amendments, is now ready for distribution.—(State Board of Health Bulletin.)

MEDICAL LECTURES.

The sixteenth course of Lane medical lectures will be delivered by Simon Flexner, M. D., LL. D., director of laboratories, Rockefeller Institute for Medical Research, New York City, N. Y., on the evenings of October 8, 9, 10, 11 and 12, 1917, at 8:15 o'clock in Lane Hall, Stanford University Medical School, Sacramento street, near Webster, San Francisco, Cal. The medical profession and students of medicine are cordially invited to attend.

The titles of the lectures to be given by Dr. Simon Flexner are as follows:

Physical Basis and Present Status of Specific Serum and Drug Therapy.

October 8, 1917, Lecture I—Epidemic Meningitis; Lobar Pneumonia; Bacillary Dysentery and Specificity in Bacterial Sera.

October 9, 1917, Lecture II—Gaseous Gangrene; Shiga Bacillary Dysentery; and the Principles of Homoserum Therapy.

October 10, 1917, Lecture III—Poliomyelitis and the Principles of Homoserum Therapy.

October 11, 1917, Lecture IV—Local Specific Therapy as illustrated by the Serum Treatment of Epidemic Meningitis, Poliomyelitis and Tetanus.

October 12, 1917, Lecture V—Chemotherapy of the Spirochetal Infections.

State Board of Health

BUREAU OF VENEREAL DISEASES.

The State will co-operate with the army and navy in reducing venereal diseases in the men stationed in California to a minimum. To do this it will be necessary to prevent these diseases in the civil population near army and navy posts, and to extend the work as rapidly as possible throughout the State.

To carry on this work it was recommended to Governor Stephens, on August 13th, by the Military Welfare Commission that a Bureau of Venereal Diseases be established under the State Board of Health and that $60,000 be appropriated from war emergency funds for its support during the next two years. The delegation which laid the plan before the Governor included Mr. Warren Olney, Jr., and Dr. Millbank Johnson of the State Military Welfare Commission, Colonel Lynch of the United States Army, Lieutenant James E. Miller of the United States Navy, and Doctors George E. Ebright and Wilbur A. Sawyer of the State Board of Health. The plan met with the hearty approval of the Governor, and work will be begun immediately.

The functions of such a Bureau have been tentatively outlined as follows:

Direct Control.

1. To secure the reporting of cases of syphilis and gonococcus infection, together with the probable sources of infection, by physicians and by the medical officers of the army and navy.

2. To investigate, with the assistance of local officials, any suspected foci of infection and to isolate infectious persons whenever it is necessary to prevent their spreading disease.

3. With the co-operation of cities and counties to care for the men and women isolated on account of venereal disease in public isolation hospitals until the patients are no longer infectious.

4. As far as possible to secure the medical

examination for venereal diseases of male and female prisoners and other appropriate groups, and to provide for their isolation and treatment so that they will not spread disease when released.

5. Through the operation of this plan to prevent the heretofore common evil of one community "passing on" to another its undesirables, thereby multiplying foci of infection.

6. To focus on this subject the social forces necessary to give former prostitutes, after they have been put into good physical condition, an opportunity to enter into productive occupations under conditions fair to themselves and to the community.

Public Opportunities for Diagnosis and Treatment.

1. To investigate all clinics or hospitals treating venereal diseases and to bring into existence adequate day and evening clinics and opportunities for hospital treatment for syphilis and gonorrhea.

2. To make a list of accredited clinics in which venereal diseases are treated, accrediting only those which reach high standards in staffs, equipment and results.

3. To purchase and issue, without charge, to approved public hospitals and clinics, salvarsan or approved substitutes, for use in making cases of syphilis non-infectious in the shortest possible time.

4. To arrange with city laboratories to give free diagnostic tests for syphilis and gonococcus infections, and to encourage the more general use of the free Wassermann tests and other tests available at the Bureau of Communicable Diseases.

Educational.

1. To issue printed pamphlets, cards and placards of information relative to the prevention of venereal disease, and to co-operate with the army and navy and other agencies in giving talks to appropriate groups.

2. To co-operate with the Military Welfare Commission in the suppression of prostitution as the principal source of venereal diseases, but avoiding confusion of the campaign against venereal diseases with the movement against vice as a strictly moral issue.

3. To oppose any local plan for licensing prostitution or issuing certificates of health to prostitutes, by showing that this is in conflict with modern methods of control of venereal diseases, and to substitute the above program, which is entirely consistent with the suppression of prostitution.

State Board of Medical Examiners

Attention has been called to the alleged violation of certain Japanese who, we understand, are practicing medicine and surgery in this state without the formality of obtaining a license issued by this board, as provided in Statutes of 1913, Chapter 354, effective August 10, 1913; Statutes of 1915, Chapter 105, effective August 8, 1915, and Statutes of 1917, Chapter 81, effective July 27, 1917.

Section 17 of Chapter 81, Statutes of 1917, provides, that any individual practicing, or who holds himself out as practicing, any system of the healing art in California, without being the possessor of a certificate issued by this board, is violating the Statutes of this State. In the amendments effective July 27, 1917, is a provision wherein the applicant before this board may write his examination in a foreign language, providing the expenses of the interpreter or translater are borne by such applicant. This expense is to be in addition to the regular $25.00 fee exacted in the Medical Practice Act of each applicant for written examination. The Board has determined that the selection of an interpreter will be made in such manner that any collusion between the applicant and the interpreter may be avoided. The plan of the board will be to conceal the name of the interpreter until such time as the applicant presents himself in the examination room. The applicant may write his examination papers in Japanese and the translator, seated at the same table, will transcribe them into English; both of these books of answers will then be retained by the board and subject to revision, if necessary, by a second translator. This board will use every endeavor to have these examinations conducted with absolute fairness and impartiality. We have been advised that interpreters, or translators, may be obtained for $10.00 per day, and inasmuch as the examination covers a period of three days, or perchance, four days, the cost to the applicant, in addition to the $25.00 above mentioned, will be $30 or $40.00, depending on whether three or four days may be consumed in the writing of the examination.

The following plan was adopted:

First: That there be one interpreter for each foreign applicant.

Second: That each applicant bear the expense of the interpreter. That the papers be translated at the same time the examinee is writing the specific papers, the idea being to prevent the papers being taken from the room where the examination is held.

Third: The recommendation that the applicant complete a paper and commence the second paper prior to the translator beginning work on the first paper, after discussion, was deemed impractical, inasmuch as should the examination close at 6:00 p. m., there would be a possibility of the last paper written by the applicant being translated after the watchers had left the examination room.

Fourth: That the original papers and the translated copies be filed permanently with the Board as a matter of record.

Fifth: That the interpreter be selected through conference with the foreign Consul, either in Los Angeles or in San Francisco, wherever the meeting may be held.

Sixth: The foreign Medical Society reports that an interpreter can be secured to translate the entire set of papers for $10.00 per day of service.

Seventh: It was recommended that the interpreter and applicant be permitted to use a small dictionary to assist in translating from the specific foreign language into English. The representative of the society agreed to recommend such a dictionary.

Eighth: It was further recommended that the interpreter be a layman rather than a medical man, thus obviating any criticism that the interpreter might be accused of professional jealousy should the applicant be unsuccessful in passing the examination.

Ninth: Providing the Board deems it expedient to engage an extra watcher for the examination of an applicant who writes the examination in a foreign language, the expense of such watcher will be borne by the applicant.

RECORD OF EXAMINATIONS BY THE STATE BOARD OF MEDICAL EXAMINERS, JULY, 1917.

Stanford University School of Medicine—Class A.

No. examined, 2; percentage of exams. passed: 81-3/9; 88-2/9

None failed.

University of California Medical School—Class A.

No. examined, 1; percentage of exams. passed: 91

None failed.

Oakland College of Medicine & Surgery—Class B.

No. examined, 3; percentage of exams. passed: 90-4/10; 86-3/9; 90-1/9

None failed.

College of Medical Evangelists, Loma Linda—Class C.

No. examined, 8; percentage of exams. passed: 80-4/9; 91; 83; 92-2/9; 87-1/9; 75-7/9 87-7/9; 87-1/9.

None failed.

College P. & S. Univ. So. Calif.

No. examined, 46; percentage of exams. passed:

98% { 86-2/9; 87-5/9; 81-2/9; 84-1/9; 78-3/9; 85-3/9; 88-1/9; 85-8/9; 91-6/9; 84-3/9; 87-7/9; 85-8/9; 80-5/9; 84-4/9; 80-6/9; 86-1/5; 88-1/9; 86-1/9; 87-4/9; 86; 77-4/9; 78-6/9; 86-2/9; 81-5/9; 76-1/9; 93-6/9; 92-7/9; 78-3/9; 92- ; 86-3/9; 88-4/9; 85-2/9; 82-1/9; 90-5/9; 83-2/9; 92- ; 81-5/9; 84-5/9; 92-2/9; 91-7/9; 89- ; 88-7/9; 83-7/9; 87-1/9; 88-2/9;

2% of exams. failed: 70-3/9.

College O. P. & S., Los Angeles.

No. examined, 17; percentage of exams. passed: 17%. 75-2/9; 84; 79-7/9;

Percentage of exams. failed:

83% { 73-2/5; 65-2/9; 64-3/9; 66-3/9; 69-2/9; 51-7/9; 49-2/9; 59-4/9; 52-6/9; 48-6/9; 69-1/9; 69-5/9; 71-5/9; 69-3/9; 70-3/9; 71-2/9;

Cal. Eclectic Medical College.

No. examined, 1—Failed: 71-2/9%.

Cornell Univ. Med. Coll., N. Y.

No. examined, 1—Passed: 90%.

Univ. of Penn., Phila., Pa.

No. examined, 1—Failed: 86-4/9%.

Harvard Univ., Cambridge, Mass.

No. examined, 1—Passed: 86-8/9%.

Edinburgh Univ. Med. Dept., Scotland.

No. examined, 1—Passed: 92-1/9%.

University of Illinois, Chicago, Ill.

No. examined, 1—Passed: 86-2/9%.

STATE BOARD OF MEDICAL EXAMINERS.

July 10, 1917. San Francisco.

Anatomy and Histology.
W. R. MOLONY, M. D.
9 to 11 a. m., July 10, 1917.
(For Physician and Surgeon and 2,000 Hours Applicants.)

1. Give origin of all of the muscles which pass across the hip joint, that is, those that have the joint between the origin and insertion.
2. Describe the attachment of the ribs to the vertebral column.
3. Describe the olfactory system; mucous membrance, olfactory nerves, olfactory bulb and cerebral connections.
4. Describe fully the spinal accessory nerve; phrenic nerve.
5. Describe fully the location, formation and distribution of the deep and superficial cardiac plexes.
6. Describe in detail each variety of epithelium found in the urinary tract beginning at the glomerulus and ending at the meatus urinarus.
7. Discuss the falmar fascis.
8. Discuss the arch of the foot; how formed and how maintained.
9. Locate five important groups of lymph glands and give drainage area.
10. Discuss the mesentary. Name subdivisions; locate each; describe the largest.
11. Discuss the clavicle—connection anad relations.
12. Discuss erectile tissue and tell all places found in the body.

Answer ten questions only.

Anatomy and Histology.
W. R. MOLONY, M. D.
9 to 11 a. m., July 10, 1917.
(For 1,000 Hours Applicants Only.)

1. Describe the rectum.
2. Describe the sternum.
3. Describe white blood cells.
4. Describe psoas magnus muscle.
5. Give distribution of the musculeo-spiral nerve.
6. Give the blood supply to the uterus.
7. Briefly describe the diaphragm.
8. Describe the wrist joint.
9. Briefly describe the cerebellum.
10. Locate the right kidney.
11. Locate the spleen.
12. Give the course and termination of the right and left spermatic vein.

Answer ten questions only.

Anatomy and Histology.
W. R. MOLONY, M. D.
9 to 11 a. m., July 10, 1917.
(For Chiropody Applicants Only.)

1. Give histology of skin.
2. Describe the os calcis.
3. Name the successive parts of digestive tract.
4. Give histology of bone.
5. Discuss bursae; name and locate all below knee.
6. Give lymph drainage of foot.
7. Give blood supply to foot.
8. What maintains the integrity of the arch of foot?
9. Name the ductless glands of the body; describe one.
10. Discuss flantan fascia.
11. Describe adipose tissue; how distributed in foot?
12. Briefly describe the circulation of blood.

Answer ten questions only.

Obstetrics and Gynecology.
R. A. CAMPBELL, M. D.
1 to 3 p. m., July 10, 1917.
(For Physician and Surgeon and 2,000 Hours Applicants.)

1. Describe the operation for complete laceration of the perineum a year or more after injury.
2. Describe the operation for the cure of a vesico-vaginal fistula.
3. Upon what would you base a diagnosis of extra uterine pregnancy before rupture.
4. Differentiate chancre, chancroid and herpes of the vulva.
5. After an abortion patient continues to bleed and has fever; give cause of bleeding and fever and describe treatment necessary for relief.
6. Given a case of placenta previa at term. Describe the method of procedure.
7. What are the external measurements of a normal pelvis? Use metric system.
8. Name the conditions which might be mistaken for pregnancy.
9. Name the conditions in which Caesarean section is indicated.
10. Discuss the menapause.
11. Describe the mechanism of labor in L. O. A. position.
12. When may pituitrin be used in labor with safety? What are the indications for its use? What are the contraindications?

Answer ten questions only.

Obstetrics and Gynecology.
R. A. CAMPBELL, M. D.
1 to 3 p. m., July 10, 1917.
(For 1,000 Hours Applicants Only.)

1. What changes occur in the uterus during pregnancy?
2. What is the normal duration of pregnancy? How is this duration calculated? Give example.
3. Name some of the conditions or diseases that might be mistaken for pregnancy.
4. How soon after the birth of the child should the cord be ligated? How ligated; describe its after care.
5. When would you use a douche following labor?
6. What are the dangers of a breech-presentation?
7. Name different positions of vertex. Which is the most frequent?
8. Describe care of the infant during the first 24 hours following birth.
9. Name the most common varieties of genital fistulae.
10. Why is gonorrhea in women a grave disease?
11. Name the most common growths affecting the uterus.
12. Give differential diagnosis between ascites and ovarian cysts.

Answer ten questions only.

Chiropody and Therapeutics.
R. A. CAMPBELL, M. D.
1 to 3 p. m., July 10, 1917.
(For Chiropody Applicants Only.)

1. Discuss infections of the nails.
2. Outline the treatment of onychia.
3. What would be your recommendation in a case of flat foot?
4. Outline the treatment of a corn occurring between the toes.
5. Discuss the treatment of callosities in a case of hammer toe.
6. Under what conditions of the feet would you advise the use of iodine?
7. Give treatment of excessive sweating of feet.
8. Give treatment of dryness and cracking of skin of feet.
9. Give treatment of ingrown nail.
10. Give treatment of bunion.
11. Name five important therapeutic agents used in chiropody. In what conditions are they indicated and why.
12. What therapeutic measures other than drugs or appliances are of use in the practice of chiropody?

Answer ten questions only.

Bacteriology and Pathology.
DR. D. L. TASKER.
3:30 to 6 p. m., July 10, 1917.
(For Physician and Surgeon Applicants.)

1. What are the causes of difference in the virulence of diphtheria? Describe an intradermic test for determining susceptibility to diphtheria.
2. Describe the lesions in valvular endocarditis; what are the most frequent sources of infection and name the common exciting agent.
3. Name three pathogenic cocci which are gram nega-

tive. Name two pathogenic bacilli which are gram positive.
4. Name three acute infectious diseases in which the relative number of leucocytes is increased and three in which they remain normal.
5. Describe the relationship between diabetes mellitus and the liability to grangrene and the slow and difficult repair of wounds and injuries.
6. On microscopic examination what characteristics tend to classify a morbid growth as malignant or benign?
7. What is the etiology of cholelithiasis and what pathologic changes may result in the gall bladder?
8. What may be the significance of an increased percentage of (1) polymorphonuclear leucocytes, (2) lymphocytes, (3) myelocytes?
9. Differentiate endogenous and exogenous intoxications.
10. How is the bacillus pestis transmitted to man?
11. Describe the life cycle of trichina spiralis.
12. Name three diseases caused by spirochaeta.

Answer ten questions only.

Pathology and Elementary Bacteriology.

DR. D. L. TASKER.

3:30 to 6 p. m., July 10, 1917.

(For 2,000 Hours Drugless Applicants Only.)

1. Define and give example: pyogenic, toxicogenic, parasitic, saphrophytic, chromogenic.
2. Describe the preparation of blood-serum culture medium.
3. Give method for staining acid-fast bacilli.
4. How does the reaction of media affect the functions of bacteria?
5. Describe the vital staining of protozoa with neutral red solution.
6. What characteristics differentiate yeasts, bacteria, protozoa?
7. Describe the lesions in valvular endocarditis; what are the most frequent sources of infection and name the common exciting agent.
8. Name three acute infectious diseases in which the relative number of leucocytes is increased and three in which they remain normal.
9. Describe the relationship between diabetes mellitus and the liability to gangrene and the slow and difficult repair of wounds and injuries.
10. On microscopic examination what characteristics tend to classify a morbid growth as malignant or benign?
11. What is the etiology of cholelithiasis and what pathologic changes may result in the gall bladder?
12. What may be the signficance of an increased percentage of (1) polymorphonuclear leucocytes, (2) lymphocytes, (3) myelocytes?

Answer ten questions only.

Pathology and Elementary Bacteriology.

DR. D. L. TASKER.

3:30 to 6 p. m., July 10, 1917.

(For 1,000 Hours Applicants Only.)

1. What is a gumma?
2. What diseases produce exostoses?
3. What pathological changes are found in acute anterior poliomyelitis?
4. What cells function as phagocytes?
5. Define (a) hypertrophy, (b) atrophy. Give examples.
6. What is an abscess?
7. Name five culture media.
8. What conditions are necessary for the growth of pathogenic organisms?
9. How do bacteria reproduce themselves?
10. What are bacterial toxins?
11. How do bacteria differ as to shape?
12. Give a method for staining bacteria.

Answer ten questions only.

Pathology and Bacteriology.

DR. D. L. TASKER.

3:30 to 6 p. m., July 10, 1917.

(For Chiropody Applicants Only.)

1. Describe the pathology which characterizes a bunion.
2. Why do cases of locomotor ataxia sometimes exhibit ulcerations on the soles of the feet?
3. What forms of infection are most frequently found around the toenails?
4. How does the skin of the feet react to abnormal pressure and friction?
5. What produces ingrowing toenails?
6. How is the contact area of the plantar surface altered by weakness of the transverse arch?
7. What is an ulcer?
8. What is a fistula and what does it signify?
9. What are the constitutional signs of infection?
10. What is gangrene and what disease sometimes exhibits it in the toes?
11. How can skin areas be sterilized?
12. What is a pathogenic organism?

Answer ten questions only.

Physiology.

10 a. m. to 12 m., July 11, 1917.

DR. ERNEST SISSON.

(For Physician and Surgeon and 2,000 Hours Drugless Applicants.)

1. Describe the functional relation of nerve and blood supply of kidney.
2. Discuss the thyroid gland.
3. Describe the nerve tract of efferent and afferent communication to the intestines.
4. Describe the coronary circulation.
5. Discuss pulse wave and velocity of blood stream.
6. Describe the effect of section of the trigeminus nerve on blood vessels in the area of its distribution.
7. What influences the quantity of carbon dioxide given off and oxygen consumed.
8. Why does dilute hydrochloric acid remain in the stomach much longer than water?
9. What is understood by an harmone?
10. What influence do the upper motor neurones have over the lower neurones? Demonstrate by diagram of reflexes.
11. Describe the refractory period of heart muscle and its physiological importance.
12. Give the physiology of the adrenal bodies and describe their divisions.

Answer ten questions only.

Physiology.

DR. ERNEST SISSON.

10 a. m. to 12 m., July 11, 1917.

(For 1,000 Hours Drugless Applicants.)

1. Describe the pulmonary circulation.
2. Describe the heart and its action.
3. Describe the mechanism of respiration.
4. What effect has change of temperature on action of kidneys?
5. Describe the digestion of starch.
6. Describe the thoracic duct and its function.
7. What are afferent and efferent impulses?
8. What is the cause of muscular fatigue?
9. Describe the valves in the digestive tract and their action.
10. Name and locate three ductless glands.
11. Describe the patellar reflex.
12. Describe the function of the skin.

Answer ten questions only.

Physiology, Chemistry and Hygiene.

DR. ERNEST SISSON.

10 a. m. to 12 m., July 11, 1917.

(For Chiropody Applicants Only.)

1. Describe the pulmonary circulation.
2. Describe the heart and its action.
3. Describe the mechanism of respiration.
4. What effect has change of temperature on action of kidneys?
5. Describe the digestion of starch.
6. Describe the thoracic duct and its function.
7. What are afferent and efferent impulses?
8. What is the cause of muscular fatigue?
9. Give a simple method of ventilating a sick room without exposing patient to draughts.
10. Name some occupation that predispose to disturbances of the feet.
11. Of what diagnostic value would you attach to the finding of sugar in urine?
12. Give chemical analysis for detection of albumen in urine.

Answer ten questions only.

Hygiene and Sanitation.

H. V. BROWN, M. D.

1 to 3 p. m., July 11, 1917.

(For Physician and Surgeon and 2,000 Hours Applicants.)

1. What tests would you use to determine whether or not a specimen of raw meat was suitable for food?
2. What do you understand by the "hypochlorite" treatment of drinking water? How is it applied? Discuss its efficiency.
3. What diseases may be spread by the house fly? Discuss the most effective means of preventing the increase of flies.
4. Discuss the epidemiology of infantile paralysis.
5. Describe and discuss the disposal of waste material from a mountain resort accommodating sixty people.
6. (a) What do nitrates indicate when found in water supply in quantity.
   (b) What do nitrites indicate when found in water supply in quantity?
7. What diseases are borne by the mosquitoes? Discuss the parasitology, incubation and prevention of any one of them.
8. Name three preservatives commonly added to milk. Give tests for identification of two of them.
9. Discuss the epidemiology of trichiniasis.
10. What is meant by the term "ground water"? Discuss its source, level, flow, advantages and disadvantages as a public water supply.
11. What is "certified milk"?
12. Discuss the rationale of typhoid vaccination and explain the effects produced according to Ehrlich's theory of immunity.

Answer ten questions only.

Hygiene and Sanitation.

H. V. BROWN, M. D.

1 to 3 p. m., July 11, 1917.

(For 1,000 Hours Drugless Applicants Only.)

1. What diseases may be spread by the house fly?
2. Describe the proper water supply for a valley town of 2,000 inhabitants.
3. Name some of the diseases due to microorganisms.
4. What relation should the quantity of vegetable food, including starch and sugar, bear to animal food consumed in 24 hours?
5. What points should be considered in buying fresh and green vegetables and fruits.
6. Outline the methods of meat inspection.
7. How is typhoid fever most frequently conveyed and how may typhoid germs be destroyed?
8. How may bed clothing be disinfected?

9. Name and describe three of the contagious diseases characterized by rash.
10. Discuss the disposal of sewage in a valley town of 2,000 inhabitants.
11. Discuss the disposal of garbage from a large military camp.
12. What measures should be used to safeguard the milk supply of a large city.

Answer ten questions only.

Surgery.

P. T. PHILLIPS, M. D.

3:30 to 6 p. m., July 11, 1917.

(For Physician and Surgeon Applicants.)

1. Discuss briefly the uses of spinal anesthesia, giving technique.
2. Give the essentials of the treatment of bacillus aerogenes capsulatus (Welch) infection.
3. Under what conditions would you advise a simple mastoid operation? What are essential differences between simple and radical operations?
4. Describe causes, symptoms and treatment of displacement of semilunar cartilages of knee joint.
5. When would you advise amputation in a crushing accident?
6. Give diagnosis, and describe operation for congenital pyloric hypertrophy with stenosis.
7. Discuss briefly, glaucoma, its symptoms and diagnosis with some generally accepted methods of treatment.
8. Outline treatment throughout course of severe acute gonorrheal urethritis in the male. What complications may arise?
9. State five common causes of obstructed nasal breathing with treatment of each.
10. Give treatment in detail of simple fracture both bones middle of leg.
11. Give symptoms, causes and treatment of subphrenic abscess.
12. What symptoms would lead you to think that a patient was suffering from a concealed hemorrhage after a laparotomy?

Answer ten questions only.

Orthopedics and Surgery.

P. T. PHILLIPS, M. D.

3:30 to 6 p. m., July 11, 1917.

(For Chiropody Applicants Only.)

1. (a) Describe in detail the use of one local anesthetic.
   (b) Of one antiseptic solution.
   (c) Of one antiseptic powder.
2. Name theories of cause of congenital talipes. Name causes of acquired.
3. Describe fissures. Give treatment.
4. Describe pes cavus. Give causes and treatment.
5. Define and discuss briefly causes of gangrene. How should it be treated?
6. Describe nervo-vascular growths. Give treatment.
7. How would you treat an infected corn?
8. Define sprain. How would you treat a simple sprain of the ankle joint?
9. Discuss briefly enlarged joints with reference to their cause and treatment.
10. What factors are involved in producing varicose veins?
11. Discuss bursitis, giving causes and treatment.
12. Give the differential diagnosis between a fracture and a dislocation.

Answer ten questions only.

General Medicine, Including Clinical Microscopy.

H. E. ALDERSON, M. D.

10 a. m. to 12 m., July 12, 1917.

(For Physician and Surgeon Applicants Only.)

1. Discuss briefly the etiology and diagnosis of general paresis.
2. Discuss the etiology, pathology and diagnosis of lupus vulgaris.
3. Outline briefly the modern accepted treatment of lues in the primary phase.
4. Discuss briefly the etiology, diagnosis and prognosis of diabetes mellitus in a man 40 years of age.
5. Discuss the etiology, diagnosis and prognosis of acute oedema of the larynx in a woman 35 years of age.
6. Discuss the significance of an increase in blood platelets.
7. Discuss the clinical and laboratory diagnosis of bacterial endocarditis.
8. Discuss the clinical and laboratory diagnosis of "pin worms."
9. Discuss briefly the diagnosis and prognosis of chlorosis.
10. Discuss fully the differential diagnosis between the primary sore of lues and chancroid.
11. Define leukaemia and discuss its diagnosis.
12. Discuss the etiology, diagnosis and prognosis of typhus.

Answer ten questions only.

General Diagnosis.

H. E. ALDERSON, M. D.

10 a. m. to 12 m., July 12, 1917.

(For 2,000 Hours Drugless Applicants Only.)

1. Discuss the possible significance of vertigo in a man twenty years old.
2. Discuss the diagnosis of Jacksonian epilepsy.
3. Discuss the significance of cardiac arrythmia.
4. Discuss the significance of foetid breath.
5. Discuss the importance of pruritus and as a symptom.
6. A man thirty years old has a swollen knee and frequent urination. Discuss the possible diagnoses.
7. Discuss the probable causes of persistent occipital aching.
8. Discuss the significance of general adenopathy.
9. Describe and discuss the diagnosis of luetic periostitis.
10. Discuss the diagnosis of hypopituitarism.
11. A woman sixty years of age is pale, has dyspnoea and persistent sensation of "buzzing in the head." Discuss the probable causes.
12. Discuss the diagnosis of scarlatina.

Answer ten questions only.

General Diagnosis.

H. E. ALDERSON, M. D.

10 a. m. to 12 m., July 12, 1917.)

(For 1,000 Hours Drugless Applicants Only.)

1. Describe and discuss four stigmata of hereditary syphilis.
2. Discuss the significance of a heavily-coated tongue.
3. Discuss the significance of diarrhea.
4. Discuss the diagnosis of insolation (sunstroke).
5. Discuss the differential diagnosis of mucous patches
6. Discuss the diagnosis of shock.
7. Discuss the diagnosis of iliocolitis.
8. A girl 15 years of age is pale, has dysmenorrhea, frequent dyspnoea and occasional vertigo. Discuss the probable causes.
9. Discuss the diagnosis of high blood pressure in a man 40 years of age.
10. Discuss the differential diagnosis of variola in its earliest phases.
11. A man has a hard noninflammatory tumor over the upper sternum. Discuss the possible diagnoses.
12. Describe and discuss four varieties of abdominal hernia.

Answer ten questions only.

Dermatology and Syphilis.

H. E. ALDERSON, M. D.

10 a. m. to 12 m., July 12, 1917.

(For Chiropody Applicants Only.)

1. Discuss the causes and diagnosis of papilloma of the sole.
2. Discuss the effects of applying a 1 per cent. solution of carbolic acid as a compress on the toe.
3. Describe fully two types of syphilitic lesions commonly appearing on the feet.
4. Describe the precaution necessary in caring for the nails of a patient with active syphilis.
5. Describe and discuss perforating ulcer.
6. Describe and discuss diabetic gangrene of the toe.
7. Describe melanotic sarcoma as it appears on the toe and discuss its prognosis.
8. Discuss the etiology and diagnosis of eczema of the toes.
9. Discuss the etiology and therapy of callus.
10. Discuss bromidrosis.
11. Describe a safe and efficient method of rendering the skin surgically clean.
12. Discuss the etiology and treatment of fissures between the toes.

Answer ten questions only

Chemistry and Toxicology.

H. E. ALDERSON, M. D.

1 to 3 p. m., July 12, 1917.

(For Physician and Surgeon Applicants.)

1. Discuss the physical and chemical properties of carbon.
2. Discuss cynanogen, its chemical properties, principal compounds and its toxicology.
3. Discuss briefly the source and chemical properties of glycerin.
4. What are proteins? Give examples of the most common proteid foods.
5. Discuss briefly the chemical composition of sebaceous secretion.
6. Discuss the chemical properties of arsenious acid and the effects of chronic arsenical poisoning.
7. Discuss the danger of using alcohol as an antidote for carbolic acid.
8. Discuss mercurialism.
9. Discuss plumbism.
10. Discuss the symptoms and treatment of gas poisoning as it occurs in modern warfare.
11. Discuss iodism.
12. Discuss the toxic action of urea.

Answer ten questions only.

Toxicology and Elementary Chemistry.

H. E. ALDERSON, M. D.

1 to 3 p. m., July 12, 1917.

(For Drugless Applicants Only.)

1. Define chemistry.
2. Give the chemical and commercial names of (a) Pb $(C_2H_3O_2)$ 2, (b) $CuSO_4$, (c) CaH_2O_2, (d) S, (e) $NaHCO_3$.
3. What is an ion?
4. Discuss the chemical difference between sulphurous acid and sulphuric acid.
5. Discuss "supersaturated solution" and give two illustrations.
6. Define (a) acid, (b) alkali.

7. Discuss the danger of using alcohol as an antidote for carbolic acid.
8. Discuss mercurialism.
9. Discuss plumbism.
10. Discuss the symptoms and treatment of gas poisoning as it occurs in modern warfare.
11. Discuss iodism.
12. Discuss the toxic action of urea.

Answer ten questions only.

Materia Medica and Therapeutics, Pharmacology, Including Prescription Writing.

A. M. SMITH, M. D.

3:30 to 6 p. m., July 12, 1917.

(For Physician and Surgeon Applicants.)

1. Name two types of emetics, and give five examples of each. Also discuss the action of each type.
2. Outline the treatment of a case of impetigo contagiosa.
3. Discuss the treatment of angina pectoris. Discuss the treatment of epilepsy.
4. What is Young's rule for the dosage of medicine in children. Illustrate.
5. Describe in detail the treatment of a case of mucus colitis.
6. What measures would you employ in hemorrhage from a hemophilic patient?
7. What are alkaloids? What are glucosides? Illustrate.
8. Discuss the physiological action of chloral.
9. What are the physiological effects of caffeine, arsenious acid, quinine hydrobromide, potassium iodide?
10. Write prescription for the following:
    (a) Expectorant mixture.
    (b) Scabies.
    (c) Cystitis.
    (d) Acute infectious arthritis.
11. Discuss the conditions modifying the effects of drugs on the living organism.
12. Give treatment of—
    (a) Amebiasis.
    (b) Uncinariasis.
    (c) Taenia.

Answer ten questions only.

Homeopathic Materia Medica, Therapeutics, Pharmacology and Prescription Writing.

R. A. CAMPBELL, M. D.

3:30 to 6 p. m., July 12, 1917.

(For Physician and Surgeon Applicants.)

1. Name the remedy for the following:
   (a) Face pale and swollen, skin dry and rough; has great thirst and can not tolerate odor of food, burning eyes with acrid lacrimation; nasal discharge thin, watery and excoriating worse in morning.
   (b) Sharp stitching pains in chest, worse from motion, delirious with the affairs of the day; mouth dry, tongue coated, and drinks quantities of water.
2. (a) Write a prescription containing three drugs and a vehicle.
   (b) Give the symptoms of the case for which you would prescribe it.
3. Describe the headache of (a) belladonna; (b) spigelia; (c) Sanguinaria; (d) nux vomica; (e) bryonia.
4. What are the abdominal symptoms calling for (a) colocynth; (b) dioscorea; (c) nux vomica; (d) merc. corr; (e) chelidonium.
5. Name three causes of iritis. Briefly outline the treatment.
6. Give blood pressure findings upon which you would refuse an applicant life insurance and give reason for doing so.
7. Discuss the relative merits of three drugs used for local anaesthesia.
8. Name the alkaloids of opium. How do they differ in action?
9. Describe the delirium of stramonium, hyoscyamus and bryonia.
10. Discuss nux vomica therapeutically.
11. Define idiosyncrasy. Discuss one example.
12. Discuss oleum ricini physiologically and therapeutically.

Answer ten questions only.

Eclectic Materia Medica and Therapeutics, Pharmacology, Including Prescription Writing.

H. V. BROWN, M. D.

3:30 to 6 p. m., July 12, 1917.

(For Physician and Surgeon Applicants.)

1. Differentiate between sedatives and depressants. Give illustrations.
2. Give the specific symptomatology of epilobium, lycopodium, and eupatorium purpureum.
3. Give source, physiological action and therapy of cascara sagrada.
4. You are called to prescribe for a male, aged 45, abdomen prominent, ankles slightly edematous, stools constipated and slate color, appetite uncertain and some distress after meals. Write a prescription containing two drugs and a vehicle.
5. Name and describe action of two hemostatics.
6. Having a patient with highly alkaline urine with cystitis, how would you prescribe?
7. Give an efficient treatment for (a) seat worms; (b) tape worm.
8. How does salol act in the intestine? How is it eliminated?
9. Explain the physiological action of potassium iodide when taken per mouth.
10. In the absence of opium and its derivatives how would you relieve a patient suffering with gallstone colic?
11. Classify the following: Ergot, quinine, leptandrin, sodium sulphate, potassium citrate.
12. Give the indications for: black haw, matericaria, helionias.

Answer ten questions only.

NEW MEMBERS.

Asher, J. C., Anaheim.
Barry, Ernest, San Francisco.
Canney, F. G., San Francisco.
Dubois, Willard C., Santa Ana.
Hassan, D. W., Buena Park.
Helms, Geo. L., San Francisco.
Hornor, D. K., Lompoc.
Jones, Floyd Burton, Napa.
Proudfoot, C. P., San Luis Obispo.
Siefert, A. C. L., San Francisco.
Westerfeld, Otto, San Francisco.
Zieg, John, San Francisco.

TRANSFERRED.

Gambotta, C. A., from Santa Cruz to Oakland, Cal.

OBITUARY.

Edward Reinhard Maximilian Magnus.

Edward Reinhard Maximilian Magnus was born on the 23d of February, 1854, in Langsow in the Mark Brandenburg, Germany. Originating from military parentage, he was also to become a German army officer. He went through the usual educational training and when 18 years old, and about to enter actual service, emigrated to the United States. He came to California and was engaged in San Jose for several years as newspaper correspondent, bookkeeper, teacher in fencing and athletics.

In 1888 he graduated from Jefferson College, Philadelphia, and settled in San Francisco, where he lived until his death.

In 1875 he married Miss Carmen Bosque, who survives him. His son, Dr. Max Edward Magnus, died suddenly shortly after his father's demise.

Dr. Magnus was a highly public-spirited citizen, with a broad mind and big heart. He was interested in all sorts of civic, fraternal and social organizations; he tried to introduce into San Francisco schools the German system of compulsory physical training, and was for a time "director of physical culture." To Dr. Magnus we owe the arrangement of the Beethoven Festival of music, which served to introduce Alfred Hertz to San Francisco, and indirectly resulted in Hertz becoming conductor of the San Francisco Symphony, and which was the occasion to dedicate to the City of San Francisco Beethoven's monument in Golden Gate Park, a gift of the New York Arion Singing Society to San Francisco.

Dr. Magnus died March 19, 1917, in his 63d year.

H. J. K.

Andrews, Harry Alta, of San Francisco; Cooper Medical College, '91; (C) '92; died August 22, 1917, of chronic endocarditis, aged 48.

Bowerman, Albert Claude, M. D., Strathmore, Cal.; University of Toronto, Ont., 1876; aged 67; formerly a Fellow of the American Medical Association; died at his home, May 28, 1917, from cerebral hemorrhage.

Woelffel, George A., of Willits, Cal.; Coll. Phys. & Surg., Keokuk, Iowa; died at the German Hospital, San Francisco, on August 21, 1917.

California State Journal of Medicine

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Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XV NOVEMBER, 1917 Number 11

PACIFISTS AND HYPHENATES NOT WANTED.

The present crisis is too serious to permit speech or action in anywise calculated to handicap the prosecution of the Great War. Before this one great objective all else must give way. It is lamentably poor patriotism to censure the President, whether the censure originate with Mr. Roosevelt, or with a pro-German American citizen. Mr. Wilson has deserved and in uniquely large degree has won, the confidence and respect of the American people. We are at war, and whatever personal opinion may have been heretofore, every person has now the one paramount duty of supporting the administration to the utmost of his ability.

Such patriotic support will mean subscribing to the Liberty Loan beyond our estimated ability. It will mean neither fostering nor tolerating disrespect for the Government. It will have a very definite influence in the prevention and immediate settlement of labor disputes. It will mean the following of the governmental policies appertaining to food supplies, wastage in public and private, industrial organization and all the other far-sighted plans which are being unfolded from Washington. It will mean increased appropriations in all communities for health conservation, which is the backbone of the nation, as is health in the army and navy the backbone of the military establishment.

At least while the war is upon us, we must of necessity have an autocratic government if it is to be powerful. We must all do some things we do not like. Individual freedom must be subordinated to national freedom. Organization and obedience to orders must be the watchwords. We must remind ourselves evermore that, if the issue of this war be not fought out to a finish in Europe, it will with absolute certainty seek us here in our homes.

As physicians we have a double responsibility. The one and greater, is the health of the Army and Navy. The other and nearly as great, is the health of the civilian population. Let not our loyalty be divided. Whether in civil or military service, let us learn the first lesson of the soldier, obedience.

EXTENDING FIELD OF PREVENTIVE MEDICINE.

A review of the developing concept of preventive medicine shows an interesting trend from the original applications to the eruptive fevers and great epidemic maladies such as smallpox and plague. The history of this development would be a lengthy matter. It is however worth while in brief fashion to notice the present extension of the preventive field to new departments. Among these are the concerted lines of attack on specific diseases by improved methods of quarantine and destruction of infection. Also are to be included the vast extensions in industrial hygiene which have come about because they have been shown to pay commercially rather than because of their intrinsic public health value. Child hygiene and reduced infant mortality go hand in hand with better maternity results as inter-

preted in terms of decreased puerperal sepsis, post-confinement disabilities and maternal deaths.

Not the least important of the recent extensions of the field of preventive medicine is the rapidly increasing attention devoted to matters of social and personal hygiene, and also to the old problem of venereal prophylaxis. Better housing, better wages, better working and living conditions, better babies, better schools, better amusements, temperance in eating and drinking, sane and wholesome mental habits,—all of these are taking their rightful place in the scheme of preventive medicine as that term is coming to be understood. In short, all that makes for a happier, healthier and longer life for the average individual has a place in the scheme and a definite contribution to the cause of prevention of disease.

A noticeable feature recently in this connection has been the attention bestowed on old familiar disease dangers which, because of their familiarity had too often come to be considered, if considered at all, as necessary factors of every day life which were not to be attacked practically. An example was the attitude toward typhoid, tuberculosis and malaria. All of these were only a comparatively short time ago of wide distribution throughout the United States. The first two have received such efficient attention that already a distinct improvement is to be seen in their morbidity and mortality. The last has only now come into full recognition as a major public health problem of the United States from the standpoint of preventive medicine. And this is the more remarkable when it is recalled that the cause and means of conveyance have been understood for no short period.

In illustration of the late recognition of the public health importance of malaria, may be cited a contribution of J. W. Trask, assistant surgeon general of the U. S. Public Health Service.* Trask relates the difficulty experienced by the Public Health Service in securing data of any value on the actual incidence of malaria even in those districts where it was known to be endemic and common. This, of course, is but another example of the imperfect reporting of vital statistics in the United States and the limited registration area. He found three general endemic areas, one large district comprising the southeastern section of the entire country, one in the central river valleys of California and the last in New England and New York State. In addition it is present to some degree in practically every State of the union. He goes on to show that it is one of the chief health and economic problems of the country. Such a report shows the rapid extension of the concept of preventive medicine to new diseases and conditions which have an intimate bearing on public health.

THE ALCOHOL QUESTION.

V. In Conclusion.

There has recently come to our attention a pamphlet entitled "Medical Science on the Side of Alcohol," which is devoted to the views of Dr. Abraham Jacobi, as reported to have been recorded in the New York Times (date not given). The first page does not interest us, as it gives the description of Dr. Jacobi from "Who's Who in America." Following this, however, is much of pertinent interest, not because of the exact views expressed, because they are most inexact, but because of the new illustration afforded of an eminent reputation becoming a cloak for ignorance.

We pick but two from many possible points of criticism of this pamphlet. Dr. Jacobi's opinions on alcohol as published in 1880 are quoted as having a present-day value. A great argument is made of the fact that certain pharmacologists ascribe a food value to alcohol. As for the first, it can be dismissed as irrelevant. As for the second, the argument should be completed with the statement that the food value of alcohol is recognized and that the same authorities who recognize it, also recognize and emphasize its limitations as a food. In other words, alcohol is only oxidized in the body to a limited extent, and therefore its food value is extremely limited. Along with this very minor action, goes the toxic action which has been previously described.

To repeat, this dragging of Dr. Jacobi into such an argument and on such a side of it, serves to cast great discredit on Dr. Jacobi's reputation as a scientist and humanitarian, for both of which he is justly noted. Well-earned reputation in one line does not empower a man to speak with authority in another line. At present we are forced to accept the verdict of the facts in the case as observed by present-day observers under carefully controlled conditions. It is a trick of the losing side to seek authority for itself in the protection and support of those whose authority is recognized by all. That the weight of a widely known physician's opinion should be sought is natural but the result is the opposite of that intended. Medical science today in no uncertain terms stands opposed to the use of alcohol as a beverage. The quotation of Dr. Jacobi as favoring the use of alcohol, is a compliment to the reputation of Dr. Jacobi, but serves to show that Dr. Jacobi is not in touch with the trend of present investigation and social conscience.

We have briefly touched on the social, economic, physiologic and public health indictment against alcoholic beverages. We have noted the fact that alcohol can help win the great war, or can seriously hamper that all-important necessity. No question enters of the personal desires or safety of the individual user of alcohol. That is not a matter for debate. The question, stripped of camouflage, is whether the United States can fight better with or without alcohol, whether social conditions and living conditions will be improved or deteriorated by alcohol, whether public health will be advanced or harmed by alcohol, whether economic efficiency will be increased or diminished by alcohol. We must face this question, whether we will or no. We cannot point to England or France or Japan and apply their experi-

* Am. Jour. Pub. Health, Dec., 1916.

ence to ourselves. No precedent is safe unless it is confirmed by our objective present findings.

If individual freedom demands that every man have his available alcohol, then why does it not equally demand that he also have his cocaine and morphine? All are drugs, with certain actions which are beneficial when properly directed and with other actions which work untold harm when allowed "freedom." The social conscience of our time will not allow personal freedom to be confounded with license and loss of self-control.

We believe that the evidence in the various lines cited is decidedly against the value or necessity of alcohol as a beverage. We will be glad to hear evidence, if there be any, to the contrary, but we will not tolerate camouflage and sophistry and cloaking of mercenary designs under misleading argument and ostensible moral purpose.

TYPICAL "NEGLIGENCE" CASES AND SOME REASONS FOR THE FORMATION OF THE INDEMNITY DEFENSE FUND.

We have on several occasions stated in these columns that many of our members are under the mistaken impression that claims for malpractice and actions for alleged negligence and carelessness are as a rule asserted and filed only against the younger members of the profession—those who might be regarded as less skilled or experienced, or against whom some imputation of recklessness might be made. Nothing could be further from the truth. We have also stated on a number of occasions in these columns, and we do not hesitate to say again, that ignorance or rapacity do not discriminate in the selection of their victims, and that the oldest, best qualified, and most experienced of our number are just as much the subject of attacks for alleged malpractice as any others.

To point these statements we will quote a few typical cases from our legal defense files (names and other identifying data being, of course, omitted).

Case 1: A physician of forty years' experience, a graduate and post-graduate of two or more leading colleges of medicine, is called to attend a patient suffering from a bone felon. He prescribes a recognized standard surgical dressing, finally lances the finger and gives proper and careful instruction as to cleansing, etc. He is then discharged by the patient, who does not think a doctor's services necessary any longer, and who thereafter undertakes the treatment of the finger himself. He permits infection to go on and the finger has to be amputated. The patient then sues the doctor for $10,000.

Case 2: A patient, riding in an automobile which collides with a railroad train, sustains seventeen fractures of the arms, legs and ribs. He hovers between life and death for a month. The physician, fully experienced and qualified, by the use of special appliances, secures and maintains the correct apposition on all fractures, carries the patient beyond the effects of the shock, threatened pneumonia, and even takes the precaution to have his treatment checked and approved from time to time by an able consultant. The patient discharges the physician at the end of seven weeks and files suit for $25,000 for negligently delaying recovery.

With few exceptions the foregoing are fair samples of what our legal defense records disclose. Such claims are being asserted against our members on an average of about eight per month. Ridiculous as they may appear from the standpoint of medical science, they are nevertheless a menace to the individual involved, and require skilful and vigorous handling in his interests.

If you have not gone through an experience of this kind, why not accept the judgment of your representatives and officers and those who have met with such accusations, and fortify yourself and protect your family against possible adverse judgments? The Indemnity Defense Fund was formed to meet this situation.

THE ABSENT DOCTOR'S PRACTICE.

At the suggestion and request of Dr. J. Henry Barbat, President of the State Society, attention is called to a situation in the medical fraternity which should receive the earnest attention of every medical man in the State. An agreement has been entered by the majority of the profession to protect to a certain extent the incomes of their confreres who have gone to the front, first by giving to the doctor's family, or the doctor himself, one-third of the fees collected from his patients, and second, by returning the patient when the doctor returns from the war.

It is unfortunately the case that these provisions have not been complied with always in the manner reflecting honor on the profession. Many complaints have been received from men who are at present away from their own practice, stating that as yet they have received nothing or only a few dollars. While it cannot be expected that an individual will receive one-third of his previous income while he is away, he should be made to feel that his confreres at home are trying to make his lot easier by treating him honestly and fairly in the matter.

It is suggested that the county societies again take up this matter with their members and instruct them to keep a separate account of all patients of men who have gone to the military service, so that when the latter return, they may receive a full account of the work done for them by their friends at home.

In the case of San Francisco County Society, numerous requests have come asking to whom such money should be paid, and in many cases the absentees have left no authorized agent to receive it. Each doctor going to the military should leave proper instructions with his county secretary. And especially should each doctor attending patients of those in the military, be most punctilious in forwarding to the authorized agents the proper proportion of collected fees.

STATUS OF HEALTH INSURANCE.

The war has so changed conditions as to render it practically impossible for us to look to England for the information which we so much needed before being able to draw a definite conclusion as to the good or bad results from health insurance. Conditions in other European countries where health insurance is enforced are so different from those in the United States as to render deductions from their statistics unsatisfactory. We do know that the system is not working one hundred per cent. perfect in England, and that very little change can take place in it until those most concerned have more time to give to its study there.

Here at home, the war has forcibly brought to our notice evidence of a large amount of unrecognized disease. Much of this has gone unrecognized because of the inability of individuals to pay for medical service, and because of their ignorance in regard to clinics. The medical examinations which were necessitated by the draft have done much toward exposing otherwise ignored disease. As a result the State has done what it could to induce accepted individuals to apply to the proper sources for treatment.

The question naturally presents itself, as to why did we have to wait for our entrance into war to do all these things, and whether, when we are through with war, we will be content to return to the old order of things. Will we not demand some improvement in public health measures, a better control of patients with contagious and communicable diseases, more preventive work, more hospitals, better clinical facilities for general practitioners, more diagnostic clinics, more laboratories, etc.

We are by no means certain that health insurance will solve all the above problems. The Social Insurance Committee of the State Society is devoting some time to these matters and will no doubt before long publish a preliminary report. The Committee, however, needs all the assistance it can have. It welcomes expressions and opinions from all sources. Please do your bit.

CONCERNING CHRISTIAN SCIENCE.

In this issue, under the heading "Correspondence," appears certain matter which every doctor and every layman who is interested in public health, and in personal health matters, will find of important interest. These letters are self-explanatory and need no comment or addition. In connection with them we would call attention also to newspaper reports from Sacramento early in October, detailing the death of an eight-year-old boy from diphtheria while under treatment by Christian Science practitioners. According to these reports he was not allowed treatment by a licensed physician, quarantine rules were not observed, and the only treatment administered was by Christian Science practitioners.

If the facts are as detailed in the papers, this case is apparently not amenable to prosecution under a strict interpretation of the Medical Practice Act of California. It raises the old question, which is constantly with us, as to whether Christian Science practitioners have a moral, or should have a legal right, to diagnose and treat disease in any form whatsoever, when as a result of such diagnosis and treatment a non-responsible individual may be subjected to danger of unnecessary suffering or death, and the contiguous public may be subjected to unnecessary danger of contagion.

A very candid and lucid answer to Mr. Ross's letter, referred to above, shows plainly the non-religious character of Christian Science therapeutics. Religious, or non-religious, we can see no logical reason for the two extreme dangers just noted—in the first place, to the non-responsible individual, and in the second place, to the contiguous public—from the practical workings of Christian Science therapeutics.

THE RECENT ORAL EXAMINATION OF OSTEOPATHS.

As noted in the JOURNAL of last month, there was held in October an oral examination of osteopaths in Los Angeles, under the provisions of the Medical Practice Act allowing osteopaths to qualify for a physician's and surgeon's license, provided they met certain preliminary qualifications and passed a practical, clinical or oral examination. A request was made by the editor for a stenographic report of the examination questions asked. So far no reply has been received to this request, but we are informed that no stenographic record was made of said questions. A later request to the Board for details of this examination, in order that they might be included in this issue of the JOURNAL, has brought no reply at the date of going to press.

At this examination two osteopath members of the Board were examined and passed. As stated above, details of the examination are not at hand. These details will undoubtedly show that the examination was of a high character and fully sufficient to establish the professional proficiency of the candidates. An examination of such character, of course, would be particularly acceptable in the case of members of the State Board of Medical Examiners itself.

The medical profession of the State is of necessity extremely concerned with the conduct of these oral examinations. So far as the Board of Medical Examiners shows itself worthy of co-operation and support from the medical profession, just to that extent will co-operation and support be extended to it. We would suggest most earnestly that with the recent reorganization of the Board of Medical Examiners a high and consistent policy of oral examinations be established and maintained.

Details of this first examination will be published as soon as available.

EDITORIAL COMMENT.

Little observation is required to show the enormous appetite of the American people for patent medicines. When in doubt take a drug, seems a common maxim. If you do not see a sufficiently advertised or gaudily wrapped package, ask the druggist and seldom will he fail to provide an attractive carton containing the very thing which is best for your ailment. Too often the physician must bear the onus of invariably prescribing drugs, solely because the patient demands drugs and will not be cured without them. Too often the advertising matter around the package has a greater curative influence than the contents. The old rhyme has no small portion of truth when it says,

"It will cure the dreaded consumption, and a thousand other ills,
Smell of the cork or look at the wrapper, do you more good than Beecham's pills."

Yet here is the gist of the matter. In the face of this over-weening appetite for drugs and for patent medicines, why should not the food administration, or some other allied administration, advocate and enforce an economy in patent medicines and nostrums? Why not save the money that, in the form of nostrums and secret cure-alls, goes into that human garbage pail, the stomach? Why not have a campaign by the drug-store, educating the people to economize in this regard, just as they are being taught to do at the table? Why should the patent medicine vendors and manufacturers continue to reap their unholy profits in war-time, when every dollar is needed in the Liberty loan? Finally, why not a national campaign of real economy and health conservation, by doing without patent medicines and nostrums?

It is a source of pride for every physician in the State to read the following in the September bulletin of the State Board of Health. "California is the first State to face the venereal disease problem squarely, and to establish a bureau to handle it directly and vigorously." The tentative program was published in the last issue of the JOURNAL. No other single disease factor has been more important in the English and French armies than venereal disease. This alone makes it imperative that the American army be saved from such disaster. Also the retro-active effect on the civilian population, both during and following the war, is of no small importance. Uncompromising repression of prostitution is the best measure so far tested for prevention and gradual elimination of venereal disease. That such repression has not been an accomplished fact in any previous army is no argument against it, but rather a cogent reason for giving this method which has such rich promise, a thorough trial. There is no valid support of other methods to be drawn from experience of them in controlling venereal disease. But along with uncompromising repression, must go provision of adequate entertainment and recreation for soldiers and sailors. This provision is being undertaken on a broad scale by the policy of cooperation with the Knights of Columbus, the Y. M. C. A. and other agencies. The State Board of Health should receive the heartiest congratulation and support from the medical profession in its splendid campaign, in conjunction with the military authorities, to decrease venereal disease in the army.

The JOURNAL receives a constant supply of anonymous literature dealing with all manner of affairs. Among the more recent accessions of the editorial waste-basket have been a great bulk of circulars, reprints and special articles opposing prohibition. Strangely enough, on none of this material is there any clue as to the source of its dissemination. Not that we care where it may originate! Not at all! It illustrates too perfectly the losing fight of various liquor interests. Only it would be surprisingly unique to have some of this gratuitous furnace feed signed and to know that its instigators were not really as afraid of publicity as they seem to be. The instigators and authors of anonymous literature of any sort have usually a cogent reason for keeping in the dark. In this case, the reason is not far to seek. Of all men, the medical profession, through its liberal education and humanizing activity, is least susceptible to anonymous contributions. The opponent who fears to fight in the open has indeed little hope of success.

Once again will the physicians of California please look upon the leading city newspapers of California and see how they reek with the advertisement of quack, specialist, secret remedy and sure-cure. Without advertising media, Quack Chamley of Los Angeles, who receives attention in another column, could not keep up his cruel deception. With a clean press, a large percentage of the shameless abortionists and mongers of fake remedies would be bankrupt. Too often is there a striking contrast between the editorial page of the newspaper and the advertising department. There is no valid reason from the standpoint of decent citizenship, a clean news press, and an educated public sentiment, why the newspapers of California should not set a high standard of advertisement as well as of news.

Particular attention is called to a letter, published under the "Correspondence" Department in this issue, to Dr. Louise B. Deal, of San Francisco, from Dr. Flora Murray, Doctor in Charge, Military Hospital, Endell St., W. C. 2, London, England.

The women physicians in the United States are entitled to exactly the same recognition for military service as are men doing the same work and assuming the same responsibilities. Moreover, women physicians ought to be represented in the military medical service wherever their professional services can be used. It is to be greatly hoped that in the near future methods will be worked out whereby this can be brought about.

Original Articles

THE VEGETATIVE NERVOUS SYSTEM IN RELATION TO GENERAL MEDICINE.*

By FRANCIS M. POTTENGER, A. M., M. D., L. L. D., Monrovia, California.

We are just beginning to realize, after many years of study in pathological anatomy, which has heretofore been considered the basis as well as the superstructure of modern medicine, that it fails to explain those conditions which are of most interest to the clinician.[1] Pathological anatomy may acquaint us with the changes in tissue which are produced by the disease process, likewise the changes which result from it; but the gap between these two has been left unbridged. It can be bridged successfully only by an understanding of biochemistry and pathological physiology.

After many years of close study, we are confronted with many facts which we are unable to explain; largely because our field of investigation has been too narrow. The agencies through which the disease process produces its effects throughout the body, have not been sufficiently investigated. In order to understand this phase of medicine, we must realize the manner in which the workings of the human body are controlled. The various controls may be classified under sensori-motor; physiochemical; and psychical. Disturbance in any of these controls alters function and produces functional pathology or a pathological disturbance in the normal physiology.

It is to a better understanding of these various controls of the body that medicine will address itself in the immediate future. They have been omitted heretofore because of their general abstruseness. Our knowledge has been so slight that we felt our inability to understand them; but now that we have advanced in our study of normal physiology; and now that we better understand the pathology underlying disease processes and the effects of the disease processes in body tissues other than those in which the main lesion is located, we are able to trace the relationship between the two in a way that we were unable to do heretofore. The field is not so difficult as would seem at first thought. Many independent observations have been made and many fundamental truths have been already discovered, which, when put together, will greatly elucidate the subject. It will be necessary, however, for medical men to address themselves to this phase of medicine with the same earnestness and the same eagerness for truth, as they have addressed themselves in the past to the problems of physiology, pathological anatomy and general laboratory study.

The pleasure in the study of disease comes from our ability to explain the phenomena observed; and not until we are able to think in terms of visceral neurology, biochemistry and psychical change, shall we be able to explain the facts which present themselves in our every day practice.

At the outset of one's study in this field, it is necessary for him to understand that there will be incomplete answers to many of his questions. Many seemingly contradictory facts will be met. He must not waive aside the whole matter on this account for there are innumerable primary principles which are thoroughly established; and the number of these will increase with increased familiarity with the subject.

Our symposium this afternoon will deal with pathological physiology. We hope to bring before you—not the symptoms and the signs of the disease alone—but we hope to offer a basis for their explanation. A symptom is a disturbance in normal physiological function. As long as function proceeds in its normal way, no symptoms are presented; but when the normal course is altered, then they arise. In medicine we have made the ridiculous mistake in the past of trying to ignore functional disease; we have tried to brush it aside and consider nothing but organic change; but now we have learned that organic change expresses itself in functional derangement, and it is functional derangement that gives the patient most concern and demands study and relief at the hands of the physician. We shall endeavor by the papers here presented to take up two phases of normal physiological control; that of the vegetative nervous system and the endocrine glands. It can be seen then that the foundation for this symposium is normal physiology or an inquiry into the manner in which nature carries on the intricate activities of the body.

In opening the symposium, I shall confine my discussion to the vegetative nervous system. It must be remembered at the outset that there can be no serious change in the equilibrium of the vegetative nervous system without causing disturbances in internal secretions; neither can there be any serious change in internal secretions without disturbing the equilibrium of the vegetative system.

THE VEGETATIVE OR INVOLUNTARY NERVOUS SYSTEM.

In order to make my meaning clear, I shall define the terms used in this discussion before proceeding. In speaking of the vegetative nervous system, I mean the same system as is spoken of by various writers as involuntary and autonomic. (The autonomic is also applied by some writers to the *greater vagus* division of the vegetative system.) It is that system which acts without an act of the will. It presides over those body functions which are necessary to life; and which would be endangered were they left to voluntary control.

The vegetative system supplies nerve fibers to the pilo motor muscles and sweat glands; to the gastrointestinal tract and all glands connected with digestion; to the heart and blood vessels; the respiratory mucous membranes and musculature; the genito-urinary system and all of the secretory glands and all smooth muscles of the body.

The vegetative system consists of two divisions

* Read before the Medical Society of the State of California, San Diego, Cal., April 19, 1917.

1. Pottenger. The Importance of the Study of Pathological Physiology in Internal Medicine; Illustrated by the Analysis of the Symptomatology of Tuberculosis. (Read before the Forty-second Annual Meeting of the Mississippi Valley Medical Association held at Indianapolis, Ind., October, 1916.)

which are physiologically antagonistic. The *sympathetic* system, which takes its origin from the thoracic and upper lumbar segments of the cord; and the *greater vagus,* the fibers of which arise from the mid brain, bulb and sacral portion of the cord. The fibers of the *greater vagus* run in the third, seventh, ninth and tenth cranial nerves, and in the pelvic nerve. This division of the vegetative system is sometimes spoken of as the autonomic, but should not be because of the confusion which it fosters, on account of the vegetative system as a whole being called autonomic.

The vagus is the greatest nerve of this system. The vegetative fibers in the third, seventh and ninth cranial nerves, likewise those in the pelvic nerve, have practically the same action as the tenth cranial, usually called the vagus nerve; consequently, I prefer to speak of them collectively [2] (following Eppinger and Hess), as the extended or greater vagus; and by so doing we arrange the fibers of the vegetative system in two divisions in which all of the fibers belonging to each division have similar action, and so that the two divisions as a whole antagonize each other.

In order to make clear the importance of so dividing the vegetative system, it must be understood that wherever the *sympathetic* and the *greater vagus* fibers meet in an organ, their action is antagonistic. It must further be understood that this antagonism preserves equilibrium and is accountable for the normal physiological action of the organ. If the fibers in one system are overstimulated, then a disturbance in physiological action results and symptoms appear.

It must not be thought, however, that every extra stimulus of one division is going to overcome the action of the other division and destroy the normal equilibrium. The normal equilibrium is not so easily upset. An *adequate stimulus* is necessary. An *adequate stimulus* is one which will overcome the action of the opposing nerve. It may be slight in one case and severe in another. The more stable the nerve equilibrium, the greater the stimulus must be before it becomes adequate. Herein lies the explanation of the oft noted fact that one patient shows symptoms easier; or shows more marked symptoms than another patient under apparently the same conditions.

THE ACTION OF THE SYMPATHETIC AND GREATER VAGUS IN THE IMPORTANT VISCERA.

In order to understand more fully the action of these two systems, it might be well to take up the important organs and show the tendency which will result from overstimulation of each of the divisions of the vegetative system. In the eye, we have the fibers of the *greater vagus* running through the third nerve, stimulation of which produces a contraction of the pupil and ciliary body (accommodation spasm), and a widening of the palpebral fissure. Stimulation of the *sympathetics* on the other hand dilates the pupil and causes contraction of Mueller's muscle, throwing the eyeball forward. Thus we can see that a disturbance in the equilibrium in the vegetative system in the eye, influences accommodation; and this shows us why it is extremely difficult to fit glasses to patients whose nerve equilibrium is disturbed (neurasthenics). It also explains the disturbance in accommodation during toxemia, because toxemia acts upon the *sympathetic* system, and disturbs the normal equilibrium. It can be seen also how the eye symptoms are produced in exophthalmic goitre. Stimulation of the vagus increases the secretion of tears; while stimulation of the *sympathetic,* decreases it.

In the gastrointestinal tract, vagus stimulation increases appetite, increases gastric secretion, including hydrochloric acid; increases the secretion of the mucous glands of the gastro-intestinal tract and the secretion of the liver and pancreas. *Sympathetic* stimulation decreases appetite, decreases the gastric secretions, including hydrochloric acid; decreases the secretions from the mucous glands of the intestinal tract, liver and pancreas. Vagus stimulation increases motility of the stomach and intestines. *Sympathetic* stimulation decreases motility of the stomach and intestines.

Thus we can understand the dry furred tongue, decreased digestive capacity and constipation which accompany toxemia, particularly that of the acute type such as is found in the acute infectious diseases. This is an indication of marked sympathetic stimulation. Hyperacidity, hypermotility (either gastric or intestinal), pylorospasm, and spastic colon, are all indications that the equilibrium of the vegetative nervous system has been upset and that the vagus has been the division which has been overstimulated.

In the respiratory system, *vagus* stimulation increases the irritability of the mucous membrane of the nose and throat; increases the secretion of mucus in both the nose and throat; also, produces bronchial spasm and increases bronchial secretion. *Sympathetic* stimulation decreases the secretion and irritability of the nose and throat, and decreases the bronchial secretion and relaxes bronchial spasm. Hay fever and asthma then, are both expressions of increased vagus stimulation. Both may be ameliorated or relieved by the administration of atropin, which is a direct pharmacological antagonist of the vagus, or by adrenalin which stimulates the sympathetic nerves and causes them to oppose the vagus.

In the circulatory system, conditions are different from what they are in the respiratory and digestive systems. In the respiratory and digestive systems, the *greater vagus* is the system which produces increased muscular activity, while the *sympathetic* causes muscular relaxation. In the circulatory system, however, the opposite is true. Stimulation of the *sympathetic* produces vasoconstriction, increases the rapidity of heart action, and raises blood pressure; while the *vagus* system slows the heart's action, causes reduction of blood pressure, and in some instances apparently opposes vasoconstriction, although other factors come in here which make this phase of the subject extremely difficult to understand.

2. Eppinger and Hess, Vagotonia. (English Trans.) Nervous and Mental Disease Pub. Co., New York, 1915.

Nearly all secreting organs (suprarenals and thyroid are exceptions) have their secretory power increased by vagus stimulation, and it seems that each organ produces metabolites during its action, which act upon the arterioles and produce vasodilatation. In this way we account for the fact that each organ during activity shows a dilatation of its blood-vessels, which affords the opportunity for the increased supply of blood necessary for the extra work thrown upon it.

The innervation of the sweat-glands is as yet difficult to understand. Sweating seems to be a part of both increased sympathetic and increased vagus stimulation. Pilomotor muscles are supplied by the sympathetic system.

SYMPATHETIC AND GREATER VAGUS SYNDROMES.

From our discussion thus far, it will be recognized that when the tonus in either the sympathetic or *greater vagus* systems is increased, we should have more or less definite pictures. These might be spoken of as the syndrome of increased sympathetic tonus and the syndrome of increased vagus tonus.

In order to appreciate the result of excessive stimulation in either of these divisions of the vegetative system, it is necessary to fix definitely in our minds these two syndromes.

Our study of the vegetative system has been facilitated by the fact that there are certain pharmacological remedies and certain internal secretions which act largely or wholly upon one or the other division. For example: Adrenin acts upon the sympathetic system; and when injected into the body, produces the same symptoms as though the sympathetic system itself were stimulated. Pylocarpin, on the other hand, produces for the most part the same group of symptoms as is caused by increased vagus stimulation. Atropin has proven to be antagonistic to the *greater vagus* although its effect is not so strong in some divisions as in others. Its action is particularly weak on the sacral branches. Ergotoxin is also used at times as a paralyzant of the sympathetic fibers.

Sympathetic Syndrome.—From the use of these remedies we have learned that the syndrome of predominant *sympathetic* stimulation results in some of the following symptoms: Dilatation of the pupil; pushing forward of the eyeball; decreased lacrymal secretion; decreased salivary secretion; decreased secretion of the gastric and intestinal glands, including the liver and pancreas; decrease in the secretion of the mucous membrane of the air passages, both upper and lower; relaxation of the muscles of the air passages; increased tonus of the ileocecal valve; increased rapidity of the heart's action; lengthening of the rest pause in the heart; vasoconstriction; increase of blood pressure; increase of the amount of glycogen in the blood stream; contraction of the pilomotor muscles; contraction of the muscles of the sweat glands; and an increase in the leucocytes, particularly the neutrophiles.[3] [4]

Greater Vagus Syndrome.—On the other hand, the syndrome of predominant vagus stimulation consists of contraction of the pupil; contraction of the ciliary body, shortening of the focal point of the eye; increased lachrymation; increased salivary secretion; increased secretion of the glands of the gastric and intestinal tracts, including those of the liver and pancreas; increased motility of the stomach and intestines, the former leading to nausea and vomiting, the latter to spastic constipation or diarrhea, according to the degree of stimulation or according to whether the circular or longitudinal fibers are particularly irritated; spasm of the pylorus; spasm of the anal sphincter; increased irritability of the mucous membranes of the upper and lower air passages, causing sneezing and at times laryngeal spasm or bronchial spasm; increased secretion in the upper and lower air passages; slowing of the heart beat; lowering of blood pressure; decreased coagulability of the blood; vasodilatation in certain areas; a general tendency to perspiration; eosinophilia and lymphocytosis.

In these two syndromes, one will find a large number of the symptoms met with on the part of the internal viscera. Their variability depends upon the normal tonus of the *sympathetic* and *greater vagus* in each individual; also upon the fact that a person may show an increased tonus in one part of the *sympathetic* or *greater vagus* division and not in all.

CLASSIFICATION OF SOME OF THE COMMON SYMPTOMS INDICATIVE OF FUNCTIONAL DERANGEMENT.

Analysis of the above syndromes shows that in the respiratory tract, the digestive with the exception of the ileocecal valve and the internal anal sphincter; and the genito-urinary tract, increased sympathetic stimulation produces a hypofunction, both in muscular and secretory structures. In the circulatory system, on the other hand, increased sympathetic stimulation produces a hyperfunction, giving an increased rapidity of heart beats and a general vasoconstriction, with resultant increase in blood pressure.

Increased stimulation of the *greater vagus,* on the other hand, produces a hyperfunction in the respiratory, gastro-intestinal and genito-urinary systems, increasing secretion and motility. In the circulatory system, on the other hand, it slows the heart beat, lengthens diastole and weakens the ventricular contractions; and in certain locations at least, produces vasodilatation.

If we take up some of the common symptoms and syndromes met in every day practice, we shall find that they may be analyzed according to their relationship to these two divisions of the vegetative system.

Hay Fever.—Hay fever shows as an increased lachrymation; increased irritability of the nasal mucous membrane, resulting in sneezing; increased secretion of the nasal mucous membrane; and sometimes both increased secretion of the bronchial mucous membrane, and bronchial spasm. Thus it can be seen that this is a definite picture of increased irritation of the respiratory and ocular branches of the greater vagus.

3 Pottenger. The Syndrome of Toxemia; An Expression of General Nervous Discharge Through the Sympathetic System. (Journal of American Medical Association, January 8, 1916.)

4. Ibid. Clinical Tuberculosis. (C. V. Mosby Co., St. Louis, 1917.)

Asthma.—Asthma is a condition which is accompanied by bronchial spasm and increased bronchial secretion; sometimes an increase of secretion in the upper air passages; and a tendency to cough; and often eosinophilia. This is also indicative of increased vagus stimulation. It often occurs in patients who have other symptoms of increased vagus tonus; and may be accompanied by them, such as hyperacidity and spastic constipation. The heart beat, which would naturally be slow if it showed the same increased vagus irritation, is increased in its rapidity by the dyspnea present.[5]

Hyperchlorhydria.—There are many functional disturbances on the part of the gastro-intestinal tract that can be separated according to their action upon the sympathetic and *greater vagus.* Hyperacidity must be looked upon as a functional derangement. It may result from an organic disease of the stomach itself or from any irritation which expresses itself in increased tonus of the gastric branches of the vagus. It is extremely common as a symptom of gall bladder disease and of appendicitis. It likewise comes in tuberculosis as a result of the inflammation of the lung tissue; and can be found as a result of inflammation in many of the other important internal viscera. Hyperacidity is usually accompanied by either an increased tone of the stomach wall or increased motility. It is very likely to be accompanied by some degree of increased tone in the pylorus which at times may result in definite spasm.

Hypochlorhydria.—Hypochlorhydria is commonly found in patients suffering from acute infectious diseases or chronic infectious diseases, during stages of acute exacerbations. The depression of gastric secretion, including hydrochloric acid, is due to the toxemia acting through the sympathetic nervous system. This accounts for the long recognized fact that hydrochloric acid is indicated in therapy in convalescence from acute infections.

Nausea and Vomiting.—Nausea and vomiting are also symptoms due to increased vagus tonus. A patient suffering from hyperchlorhydria often shows slight nausea and sometimes shows vomiting as well. These symptoms are common whenever any portion of the gastro-intestinal tract is inflamed. They frequently accompany inflammation of the gall bladder or appendix, or inflammation further down the bowel. They are also frequently present in pulmonary tuberculosis, the irritation coming from the lung and reflexly influencing the gastric muscle.

Intestinal Stasis.—The subject of lessened motility in the intestinal canal has received much attention during recent years, but it has been attacked too much from the standpoint of being a disease entity of itself, which it is not, except in rare cases of mechanical obstruction.

Intestinal stasis may be due to either stimulation of the sympathetics or vagus, but more often the latter. The motility of the ileocecal valve is controlled by the sympathetic nervous system. Where we have marked stimulation of the sympathetic system, as occurs in acute toxemia and in the presence of acute infectious diseases, it would be natural that there should be some interference with the ileocecal valve, retarding the emptying time of the ileum. Such conditions are also accompanied by a relaxation of the gastric and intestinal musculature and a lessening of the secretion of the gastric and intestinal mucous membranes, which would also have an influence in retarding the onward movement of the intestinal contents. The motility of the colon being also decreased by the same stimulation, the stasis of the intestinal contents is continued on throughout the entire bowel.

Ileostasis due to vagus stimulation is of another type. Moderate vagus stimulation has a tendency to increase the tone of the muscles of the intestinal tract and if it exerts itself particularly upon the circular muscle fibers, we have a constriction which interferes with the movement of the intestinal contents, leading to the very common condition of spastic constipation.

Spastic constipation is nearly always accompanied by some degree of hyperchlorhydria. The reverse is also true. If the longitudinal fibers are overstimulated, diarrhea results.

Bradycardia.—Bradycardia is a symptom of increased vagus tonus. It has been noted in inflammation of the gall bladder, sometimes as a symptom of appendicitis, and also in inflammation of the stomach and intestine. We note it commonly also as a result of inflammation of pulmonary tissue. It can result wherever marked irritation of the vagus takes place, providing it expresses itself reflexly in the cardiac branch of that system.

Disturbance in Auriculo-ventricular Conduction.—Very often we find as a result of vagus stimulation, a disturbance in conduction of the impulse, so that the auricular contraction is not properly conducted to the ventricle. This forms a partial heart block. This is the type of irregularity that is produced by digitalis. It can be overcome by lessening the vagus irritation by the administration of atropin, or by overcoming it by stimulating the sympathetics with adrenalin.

Tachycardia.—Tachycardia is sometimes a symptom of direct sympathetic stimulation. This is the type that we find in the presence of acute toxemia; also that which is produced by the administration of adrenalin and by such depressive emotions as worry, fear, discontent and discouragement.

Toxemia.—Toxemia in its general expression is a widespread stimulation of the sympathetic nervous system, in which the system seems to be stimulated in its entirety. There is a general inhibition of action on the part of the gastro-intestinal, respiratory and genito-urinary systems; increased stimulation in the circulatory system producing rapid heart action and vasoconstriction, which interferes with heat dissipation, causing rise in temperature; and increased motility in the subdermal musculature (goose flesh).

Depressive Emotions.—There is a group of

5. Ibid. Asthma: Considered in Its Relationship to the Vegetative Nervous System. (Read before Thirty-fourth Annual Meeting of the American Climatological and Clinical Association held at Lakewood, N. J., May, 1917.)

symptoms which is generally recognized as following such emotional states as pain, fear, anger, disappointment, discontent and worry. These recently have been made the subject of careful physiological study by Cannon [6] and others, with the result that they are found to belong physiologically to the group which express themselves through general *sympathetic* stimulation.

In all conditions in which there is central sympathetic stimulation, there is a stimulation of the adrenal gland. The adrenin, which results from the stimulation, acts upon all structures supplied by the sympathetics, producing and prolonging the same effect.

REASON FOR VARIABILITY OF SYMPTOMS ON THE PART OF INTERNAL VISCERA.

One thing that we cannot fail to notice in our study of these various functional disturbances, is that the group of symptoms which is produced by stimulating certain branches of the vegetative system, are not always all present under what seem to be the same conditions. This may be due to a difference in the individual. One person has a vagus system that is more irritable than another; likewise, one has a sympathetic system which is more irritable than another. Where infection involving an important viscus is present, we now understand that expected symptoms may not appear because we have stimulation of both divisions of the vegetative at the same time. The toxemia stimulates the sympathetics, while the inflammatory process itself has a tendency to produce reflex action in other structures through the vagus. The severity of the symptoms in a given case, as well as the individual symptoms which appear, are determined by the relative strength of the stimulation through the sympathetics and the vagus. Thus, one patient with gall bladder disease will suffer severely from nausea and vomiting, while another will not; one will have marked hyperchlorhydria, and another will notice no increased acidity. The same is true of appendicitis. In our tuberculous cases we see many instances of slow heart due to the reflex stimulation from the inflammation in the lung acting upon the cardiac branch of the vagus. We often see this most marked during periods of acute inflammation in the lung when marked toxemia is present, stimulating the sympathetics and tending to produce a rapid heart. On the other hand, in other cases we see the heart assume about its normal ratio to the temperature curve, the reflex irritation of the vagus showing no signs of action [4] [7]

With this brief analysis, I hope that I have been able to impress upon you—not only the importance of the study of visceral neurology, but also to point out some practical points which will aid in the better understanding of many of our common symptoms.

6. Cannon. Bodily Changes in Pain, Hunger, Fear and Rage. (Appleton, 1915.)

7. Pottenger. The Relationship of Pulmonary Tuberculosis to the Vegetative Nervous System. (Read before American Medical Association Annual Meeting, held at New York, May, 1917.)

REPORT OF FORTY-FOUR APPENDICITIS OPERATIONS IN CHILDREN UNDER FOURTEEN YEARS OF AGE.*

By EMMA K. WILLITS, M. D., F. A. C. S., and MALVINE I. JUDELL, M. D., San Francisco.

From a review of these cases we wish to accentuate the following points:

1. Delayed operation led to abscess in the great majority of cases.

2. Cathartics were given in nearly all the cases —to their detriment.

3. Our patients have made more rapid recoveries since we have removed the appendix in abscess cases.

4. The low mortality in our cases leads us to believe that the peritoneum of the child is more resistant to infection than that of the adult.

Considering the cases of delayed operation, we found, although there is practically a unanimity of opinion that appendicitis in children is a surgical condition, nevertheless we received our cases too late. In 44 cases we had 24 abscesses, six cases in which the abdomen was filled with pus, and only 14 catarrhal appendices. Looking over the symptoms we feel, in a great majority of the 30 patients, that the diagnosis was possible before the case came to operation. In some cases, medical advice was sought late; in others, the physicians waited for classical symptoms to develop. The days of suffering and the possible future complications, to say nothing of the possible fatal issue, may be avoided in many cases by early operations.

In comparing our statistics with those of Deaver, Fowler, Sprengel, Peple, Stiven and Comby, we find the abscess cases predominating.

According to the histories of our cases, rupture of appendices occurred as follows:

15%	when	operated	upon	at	the	end	of the 1st day
10%	"	"	"	"	"	"	2nd
25%	"	"	"	"	"	"	3rd
15%	"	"	"	"	"	"	4th

That is, 65% exploded appendices in the first four days of illness. The other 35% were operated upon up to the end of the second week.

There is no doubt that these appendices for the most part ruptured in the first 48 hours, for the cases operated upon in the early stage showed small perforations, limited pus formation, and good general condition.

How is the early abscess formation in the child to be accounted for? By the undevelopment of the child.

1. The appendix is located higher up in the abdomen, favoring general peritonitis according to surgical experience.

2. The opening into the cecum is proportionately larger than in the adult, thus permitting the entrance of feces and infectious material from the bowel.

3. Lymphoid tissue being more abundant, it is

* From the Surgical Service of the Children's Hospital

* Read before the San Francisco County Medical Society, March 21, 1916.

more susceptible to infection as a sequel to enteritis, tonsillitis, and the exanthemata.

4. Furthermore, the appendix is longer and the mesoappendix is shorter than in the adult. This facilitates kinking and interference with circulation, and the short omentum prevents it forming a protective wall.

In our forty-four cases the symptoms varied from slight to very great. We found them especially deceptive because they did not supply an index of the seriousness of the pathological condition, and thus slight pain and slight tenderness were overlooked until too late. The symptoms were: Pain, vomiting, rigidity, and frequent cessation of all symptoms. Pain was at first general, and as a rule localized later. Pain preceded the vomiting. Vomiting was not always present, and often after cessation of vomiting, one was falsely led to believe that the child was improving. Distension and rigidity were generally present but the abdomen remained compressible. Only in severe pus peritoneums was it very rigid.

Rigidity was found at times in the upper right rectus region; more frequently in the lower right rectus region; again in the lumbar region; and only twice in the left lower rectus region. We conclude that localized rigidity anywhere in a child's abdomen is most likely to be appendicitis.

One case will illustrate the slight typical symptoms found on examination:

After an onset of pain and vomiting for one and a half days, followed in some hours by sharp paroxysmal pains, the patient showed no further subjective signs. Examination showed leucocytes 21,000; temperature 99.4; pulse 90; rigidity in the lumbar region. Operation disclosed a perforated appendix.

In Case 29 we found rigidity so slight that rectal examination, showing a right pelvic resistance, was the determining factor in operation.

Case 19 showed obscure symptoms of pneumonia. The increased respiration delayed operation six hours, but the increasing appendix symptoms made operation necessary. An acutely inflamed appendix was removed, and a few days later a typical pneumonia temperature was followed by crisis.

In the second pneumonia case, No. 35, the diagnosis of a double pneumonia probably prevented the early recognition of a perforated appendix.

The pulse and temperature were of very little assistance; even the blood count was only a help and never a determining factor.

Practically all cases received cathartics following the pain and vomiting. Such treatment is harmful. It hastens the emptying of the small intestine, the cecum becomes distended and in its contractions to empty itself the appendix joins, and what might through rest have remained a simple local process, becomes a complicated one.

Removal of appendix in abscess. A few years ago we were content to drain the abscess. This meant protracted drainage and often secondary operation. It is now our technic to remove all appendices, no matter how extensive the inflammation, using great care to disturb the lymph walls as little as possible, and being content to tie off the appendix only when it cannot be drawn up into the wound for classical removal.

If there is one lesson to be drawn from the study of our forty-four cases, it is that delayed operation is dangerous in appendicitis in a child. In the words of Pfaundler, the problem is not: When do we operate? but when do we *not* operate?

FORTY-FOUR CASES OF APPENDICITIS IN CHILDREN.

Number of cases	44
Deaths	1
Mortality	2 3/10%
Males 19	Females 25
Ages 2½ years to 14 years	
Between 2½ and 5 years	8
Between 5 and 10 years	21
Between 10 and 14 years	15
Local Abscess	24
General Peritonitis	6
Catarrhal Appendix	14
Previous attacks in 20 cases.	
Complications:	
Secondary operations for obstruction	2
Secondary operations for better drainage	2
Condition of appendix:	
Filled with Oxyuris vermicularis	1
Acute inflammation	10
Chronic, with adhesions	3
Perforated	20
Gangrenous	10

INTRA NASAL COSMETIC SURGERY, WITH SPECIAL REFERENCE TO RIB WITH CARTILAGE, AND CARTILAGE TRANSPLANTS.*

By GRANT SELFRIDGE, M. D., San Francisco.

Intra Nasal Cosmetic Surgery, especially the transplantation of cartilage and portions of rib with its cartilage in saddle nose, partial or complete and in notched deformities of the nose and in collapse of the alae has been a subject of great interest to me since I had the opportunity of seeing the work of Doctor Wesley Carter of New York City, five years ago. Through the courtesy of Dr. Frank Ainsworth, chief of the Southern Pacific Hospital, I have been able during my services at that hospital to work out the technic in the various deformities in which the transplant of bone and cartilage is indicated.

Many excellent articles have been contributed by specialists in recent years on the subject of nasal plastics, and it is therefore with some feeling of trepidation, especially since I have read the paper of our Dr. Eloesser, published in 1911, that I venture very briefly to present the subject with the accompanying slides. I do so, however, with

* Read before the Surgical Section of the San Francisco County Medical Society, May, 1917.

the hope that your interest may be stimulated and your efforts to relieve external as well as internal deformities may be rewarded to your own glory as well as to the vanity and well being of many unfortunates.

When I first spoke to the chairman of this section about presenting the subject of plastic surgery, I felt that the discussion should clear up if possible some of the conflicting views held by different writers as to the advisability of removing the periosteum and medullary substance in bone grafts and the perichondrium in cartilage grafts, also whether it was a better procedure to attempt to introduce one end of the graft underneath the periosteum at the naso-frontal junction or underneath the periosteum covering the entire length of nasal bones. However, since that time the study of the x-ray plates taken at the time of the grafts, and subsequently, show clearly that the bone is being absorbed and is probably being replaced by fibrous tissue, and that it therefore makes very little difference where the graft is placed. Such a conclusion is based on the absence of any change in the external appearance of the nose of each case seen since operation and since the taking of the picture.

Saddle Nose. In the cases of saddle nose my work has been confined to partial or complete, traumatic and specific in origin and associated with more or less marked deformity of the nasal septum, with the resulting defective breathing and catarrhal conditions. In the partial type the cosmetic work has been confined to the transplantation of portions of the septal cartilage, in several instances at the time of the septum resection, and in two cases to transplants of rib cartilage. In these cases it has been interesting to note that the transplant without perichondrium, absorbed after the lapse of a few weeks leaving a mass of scar tissue, while those with perichondrium remained as they were at the time of the transplant. In the complete types the transplant has been a portion of the ninth rib with its cartilage, the periosteum and medullary substance intact. In three cases, as shown in the plates, two split pieces were introduced, the upper piece with periosteum upwards, the lower down, so that both pieces have periosteum in contact with living tissue.

The operation for complete or partial saddle nose can be done with local anaesthetic using novocain ⅛ of 1 per cent. plus 5 or 6 drops of 1:1000 adrenalin solution, in addition to a hypo of scopolamin gr. 1/150 and morphine gr. ¼, or morphine ¼ and atropine gr. 1/100, or ether anaesthesia can be used combined with local.

The technic is as follows: After cutting the hairs off the nose, the skin is mopped with benzine, well washed with salt solution dried, and then iodine solution is used liberally interiorly as well as externally. A post nasal gauze plug is introduced and the nose is well packed with gauze strips. The external nose is thoroughly infiltrated with novocain solution, introducing the needle anterior to the lateral nasal cartilage and then extending up the bridge of the nose to a point above the nasal process of the frontal and downward to the tip of the nose; also an injection is made along the entire anterior border of the lateral cartilage on the side chosen for the incision. An incision is now under anterior to the lateral cartilage and carried along the bridge of the nose from the frontal region to the tip of the nose, making a sort of tunnel. This is carried downward to the maxilla in case it is necessary to mobilize the nasal bones. The periosteum is then elevated from the lower end of the nasal bone over the bridge upward to the naso frontal suture line. The ninth rib is now exposed and either a resection of the rib with ½ inch of the cartilage, the periosteum intact or an inlay cut with a circular saw. In my first four cases I followed the Carter method, removing the end of the rib with the periosteum intact. Since then I have followed the suggestion of some eastern men and have cut out an inlay with a circular saw as it is a simpler method. Great care is also necessary to get the grafts the exact width, length and thickness, and due allowance is to be made for the swelling of tissue following infiltration as that frequently gives the impression of over-correction. Iodine should be used liberally before the introduction of the graft. The graft is now introduced and one suture in the intranasal cut should be put in near the top of the nose and the rest left open for drainage. Adhesive straps are applied from cheek to cheek, care being taken not to dislodge the grafts, as the adhesive is molded to the nose. The adhesive should be carefully removed in forty-eight hours with benzine and reapplied if necessary.

The technic for partial saddle nose or notched nose is the same as described above.

It has been my habit to resect the nasal septum at the time the transplant is made, and have therefore made use of the septal cartilage for the transplant when it is sufficient. This is done because it is straight, is less liable to curl up as in the case of rib cartilage and especially so if it is accidentally put in salt solution. No packing is put into the nose unless the septum is resected at the time the plastic is done. If the original injury has resulted in a broadening of the nose the nasal bones should be cut loose from their attachment to the maxilla with a saw or the Lothrop slot forceps and the attachment to the frontal with a fine chisel, or the Carter chisel forceps, and finally lifted up and molded into position. The prominent portion of the maxilla should now be beveled with a proper file or rasp. So far I have not found it necessary to use the Carter bridge splint to keep the nasal bones in their new position, and the graft seems to prevent the contraction of the skin from forcing the nasal bones back into their old position.

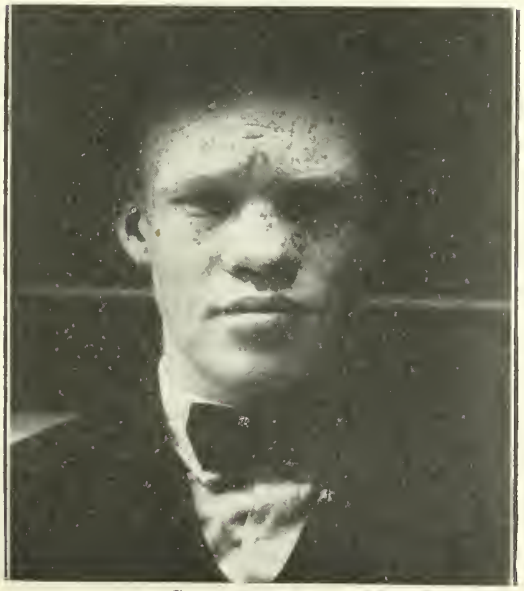
The only other condition where cartilage transplants have proved of value has been in the collapse of the alar cartilage of the nose. This condition is most annoying to the patient and is the principal cause of unsuccessful attempts to give perfect nasal respiration. By that I mean when a resection of the septum is carefully performed and enlarged turbinates trimmed down. This de-

Cast I—Before.

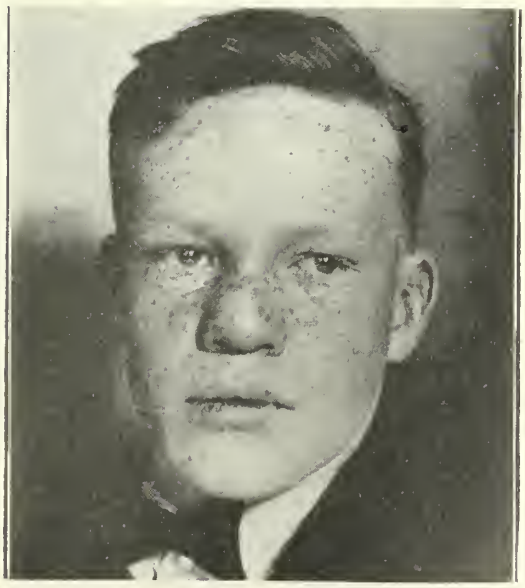
Case I—After.

Case II—Before.

Case II—After



Case III—Before.



Case III—After.

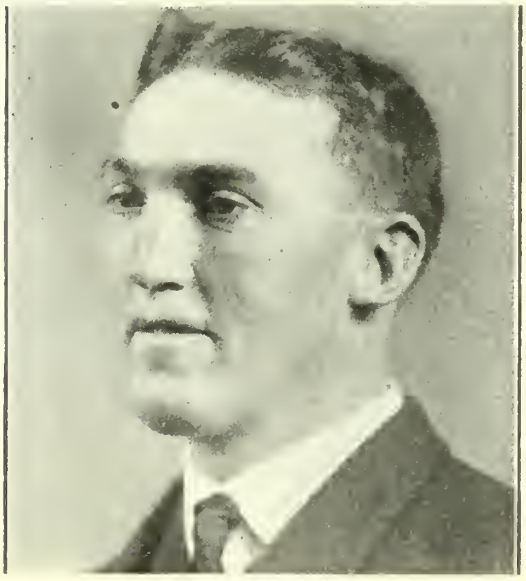
Case III—Side View. Before.

Case III—Side View. After.

Case IV—Before.

Case IV—After.

Cases I, II, III, IV—Bone and cartilage transplants, ninth rib.



Case V—Before.

Case V—After.

Case V—Corrected with cartilage taken from the septum.

Case I—X-ray.

Case II—X-ray.

Case III—X-ray.

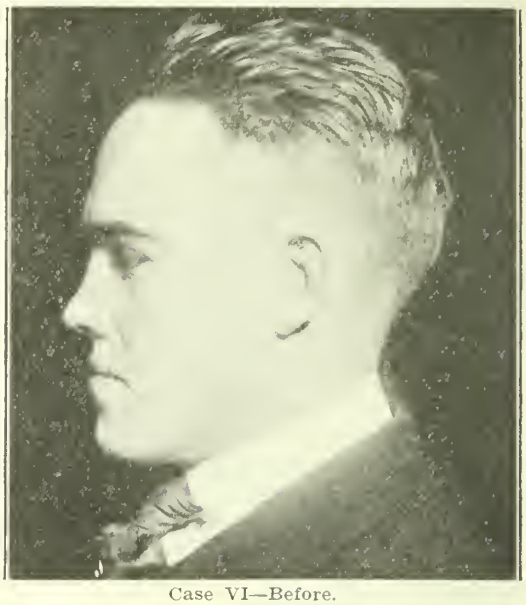
Case IV—X-ray.

Case VII—Before.

Case VII—After.

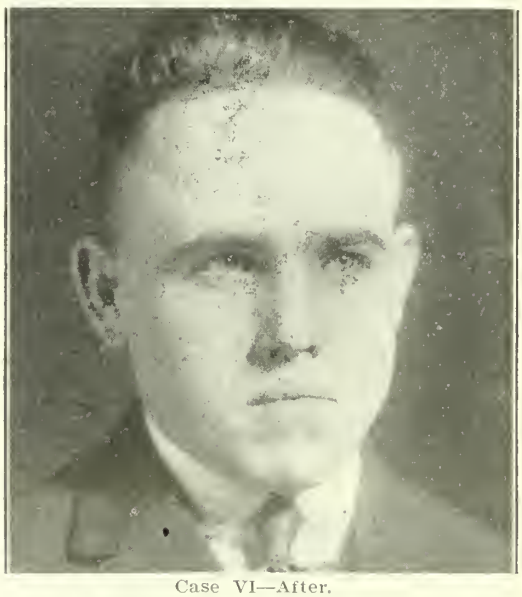
Case VII corrected with cartilage taken from the septum.

Case VI—Before.



Case VI—Before.

Case VI shows in picture one the extreme width of the nose at the maxillary-nasal region. The lateral deformity was corrected by cartilage taken from the septum.



Case VI—After.

Case VI—After.

formity is most satisfactorily taken care of by making an incision in front of the anterior border of the lateral cartilage and planting in a piece of cartilage which has been removed from the septum. Then introduce two or three silk sutures and cover the line of incision with a small strip of gauze soaked in Tr. Benzoin Comp.

The cases which are presented herewith are all traumatic in origin, except one which is luetic; of the former nothing is worthy of special comment.

The interesting point in the luetic case, probably congenital in origin, is that following a resection of the septum, to improve breathing, the luetic condition seemed to fulminate with the result that the entire septum was destroyed and with it a large portion of the hard palate. In her case, a layer of rib and cartilage was introduced and under it another piece of cartilage. The latter became infected and in spite of the frequent daily use of the strong iodine solution, Dakin solution and vaccines, the pus did not show signs of decreasing until what was left of the cartilage was removed.

CONCLUSIONS.

1. In the large majority of cases the transplant will take, if the patient is healthy, has good resistance and no visible nasal infection.

2. Luetic cases are not good subjects and the grafted tissues more liable to infection, in spite of plenty of anti-luetic treatment.

3. It makes very little difference whether the bone comes in contact with the periosteum of the

nasal bones or not. If no infection occurs the graft will be nourished.

4. The bone and bone salts undoubtedly absorb and fibrous tissue takes its place, a real desideration, especially when two grafts are introduced, one parallel to the dorsum of the nose and one parallel to the anterior border of the lateral cartilage. When the absorption occurs more flexibility of the end of the nose results.

5. In the event of an infection of the graft, its bone retention before removal frequently will have a mass of granulation tissue from which will organize and take the place of the transplant. Therefore the rule should be not to remove the graft until absolutely necessary.

Discussion.

Dr. S. Haas: As far as rhinoplasty is concerned I have had no experience, but I have had some experience in the transplantation of bone and cartilage in other parts of the body. All I shall say will pertain to that subject. We can all see that Dr. Selfridge has obtained good results from the cosmetic standpoint. The interesting part of his paper to me is that part regarding the fate of the transplanted segments of cartilage and bone. I have only read a few papers on the fate of bone transplanted into the nose, but all have had the experience of Dr. Selfridge in that the transplant gradually disappears. This would not be the case if the transplant was in some other part of the body, because we know that a transplant in contact with living bone will continue to live—there will not be a disappearance of bone. It would be interesting to find some explanation for the difference in the behavior of a transplant into the region of the bones about the nose and, for instance, into a bone of the leg. It is possible that this variation in results is due to the difference of the osteogenetic power of the nasal and frontal bones. We know that membranous bones do not regenerate as quickly as the cartilaginous bones, and as the nasal and frontal are membranous bones, it is possible that this fact has some bearing on the subject. Also, that the area of contact is not so broad in a transplant impacted on these bones at the base of the nose. Dr. Davis, in a series of experiments, has taken sections of the rib and costal cartilage and transplanted them so that they were in contact with the temporal bone of the skull; he found uniformly that the bone, either with or without periosteum disappeared but that the cartilage always persisted, and from that standpoint has advised using cartilage grafts in the nose.

Cartilage naturally is more transplantable than osseous tissue. In the first place, it receives its nourishment by imbibition and not by direct blood vessel supply. In experimental work, everyone has found that cartilage will persist indefinitely, although I think Dr. Selfridge said that in one of his cases he found that the cartilage was substituted by fibrous tissue. Whether the perichondrium is on the cartilage or removed, seems to make but little difference.

As regards operating by the external or internal method, I think the internal method is the better. Some have fear of infection of a transplant made from within the nose, but that seems to be obviated by a fairly rigid asepsis. Even if a mild infection takes place, it does not mean that the transplant is a failure, in fact it has been shown that a limited degree of inflammation stimulates the osteogenesis in a bone graft. The transplant in the nose, when rib with its costal cartilage is used, corresponds to the transplantation of the articular end of a bone. We know that you can transplant, experimentally in animals, the articular ends of bones; and also that it has been done successfully in human beings.

DIAGNOSIS AND TREATMENT OF ACIDOSIS, ESPECIALLY IN DIABETES.*

By ALBERT H. ROWE, M. S., M. D., Oakland, Cal.

It has been known for a long time that the reaction or H-ion (H) concentration of body fluids remains practically constant in spite of the normal production of many metabolic acids and the ingestion of the alkaline and acid foods. Through the work of Henderson [1] we now know that the maintenance of this definite H-ion concentration is due to the buffer action or alkali reserve of the blood along with the elimination of acids by the lungs and kidneys. He has shown that this buffer action is largely due to the carbonates of the plasma and to a less extent to the phosphates of the corpuscles. Robertson,[2] moreover, found that blood proteins are about one-fifth as efficient as the carbonates in this buffer action. It is by the process of hydrolysis that carbonates yield hydroxyl ions and that phosphates yield hydroxyl and hydrogen ions (depending on whether they are primary or secondary phosphates). The proteins, being amphoteric, can neutralize either acid or base. Thus, for example, if you take an aqueous solution of two phosphates NA_2 H PO_4 and NA H_2 PO_4 in such proportion that a neutral reaction occurs with the indicator methyl red, it will be found that considerable quantities of acid have to be added to the solution of phosphates to produce a change in tint, whereas a drop of acid is enough to change water plus the indicator to the same tint. The phosphates take up the excess of the H-ions like a sponge, or less strictly as a buffer. This same chemical reaction is continually occurring in the blood, mainly though, by the carbonates and proteins. Acids produced in the tissues combine with these buffer substances and are carried to the kidneys or lungs where they are unloaded and excreted, thereby keeping the reaction of the blood normal.

In certain pathological states, an increased production of acid occurs which results in a decrease in the alkaline reserve of the blood. When this production of acid is persistently excessive, the alkaline reserve may be lost completely, after which the reaction of the blood becomes acid and life soon becomes impossible, as in diabetic coma.

Besides this buffer action of the blood, the body possesses, as before stated, other important defenses against abnormal production of acids.

(1) Acids formed in the body are neutralized, to a certain extent, by uniting with ammonia which is normally produced during metabolism, and the resulting salts are excreted by the kidney. Thus when large amounts of ammonia are found in the urine, we can assume possible acidosis.

(2) Henderson has called attention to the remarkable excretion of non-volatile acids by the kidneys. By some specific mechanism acids are separated from bases, an acid urine being secreted

* Read before the Medical Society of Alameda County, California, November 7, 1916.

1. Henderson, L. J.: Ergebn. d. Physiol., 1909, viii, 254; Jour. Biol. Chem., 1911, ix, 403; Science, 1913, xxxvii, 389.
2. Robertson, T. B.: Jour. Biol. Chem., 1910, vii, 351; Jour. Biol. Chem., 1909, vi, 313.

from an alkaline blood. Non-volatile acids thus excreted are B-oxybutyric, diacetic, and lactic acids. When the kidneys are called upon to excrete excessive amounts of these acids, irritation results and the excretory power diminishes with consequent piling up of these acids in the blood and tissues and a decrease in the alkaline reserve or buffer action of the blood, which finally results in an increase in the H-ion concentration.

(3) Volatile acids, chiefly of course CO_2, are excreted by the lungs. The CO_2 passes from the capillary blood into the air of the alveoli until the CO_2 tension in the blood equals that in the alveolar air. The blood carries as much CO_2 as its reserve alkali can take up. As acidosis develops, the reserve alkali decreases and less CO_2 is carried by the blood, thus reducing its tension in both blood and alveolar air. By a determination of this CO_2 tension from the blood or air, the amount of alkali reserve or the buffer power of the blood is determined and therefore the absence or presence of acidosis is ascertained.

The cause of acidosis usually has been assumed to be due to incomplete combustion of fats. Other theories as to the cause of acidosis have been advanced. Allen [3] recently has reviewed all of these theories in light of his extensive experience with the fasting treatment and finally says that though some empiric observations exist, fundamentally nobody knows anything about acidosis. Woodyatt [4] seems more definite, saying that acidosis results whenever 1 part of carbohydrate is not burned to every 3 of fat or protein; that acidosis comes from the incomplete combustion of proteins as well as of fats. His excellent paper points out the absence of a sharp line of division between the diabetic and non-diabetic acidosis and is well worth careful study. Howland and Marriott [5] consider that the acidosis occurring with severe diarrhoea in infants is not due to acetone bodies but probably to a deficient excretion of acid phosphates by the kidneys. Peabody [6] considers the acidosis, which occurs in nephritis and in decompensated cardiac cases, due to incomplete excretion of probably normal amounts of acid in the blood and is doubtful whether any definite increased formation of acids in the tissues occurs. Chapin and Pease [7] most recently consider the cause of acidosis in babies due to excessively high protein diets, a damaged intestinal-epithelium, and consequent absorption of poisonous protein-split products due to bacterial decomposition.

Thus, the cause of acidosis, as Allen says, seems to be an unsettled question. Yet we do know enough about it, empirically at least, to diagnose it definitely and prevent and treat it more successfully than ever before. This is of especial importance in the treatment, of course, of diabetes.

3. Allen, F. M.: Jour. Amer. Med. Assn., 1916, cxvi, 1525.
4. Woodyatt, R. T.: Jour. Amer. Med. Assn., 1916, cxvi, 1910.
5. Howland & Marriott: Amer. Jour. Dis. Child., May, 1916, 309; Arch. Int. Med., Vol. xviii, 1916, 708.
6. Peabody, F. W.: Amer. Jour. Med. Sc., 1916, cli, 184; Arch. Int. Med., 1915, xvi, 955; Arch. Int. Med., 1914, xiv, 236.
7. Chapin & Pease: Jour. Amer. Med. Assn., 1916, lxvii, 1351.

DIAGNOSIS OF ACIDOSIS.

(a) *Clinical.*

Observation of the patient is most important. If anorexia, nausea, vomiting, restlessness, unusual fatigue, excitement, irritability, vertigo, tinnitus aurium, drowsiness, sluggish mental and physical reaction, listlessness, discomfort, painful or deep breathing is noticed, acidosis must be thought of and a complete investigation respecting the elimination of acids by the body should be made by laboratory methods.

(b) *Laboratory methods.*

(1) DIACETIC ACID.

This is the simplest test to detect acidosis. Gerhardt's method is performed by adding a few drops of strong aqueous solution of ferric chloride to about 10 c.c. of urine. A precipitate of ferric phosphate first forms which dissolves upon the addition of a few more drops. The depth of the burgundy red color is an index of the amount of diacetic acid present.

It must be remembered that salicylates, bicarbonates, coal-tar drugs, cyanates, and acetates will give positive tests. These false reactions though persist after boiling for two minutes, which process breaks down the unstable diacetic acid.

This test is most valuable when it is negative, though severe cases of acidosis may occur where the ferric chloride reaction is negative, as recently reported by Chapin and Pease [7] and mentioned in the summary of Allen's Treatment in recent numbers of the A. M. A.[8] Markedly positive reactions, on the other hand, may occur when there is very little acidosis present. Thus this reaction should always be controlled by the tests which are to be described.

Acetone has been shown by Folin [9] to play a very small part in acidosis. Folin, moreover, has demonstrated that the substance in the urine which gives the so-caled acetone test is really diacetic acid. This test, therefore, has been discarded.

(2) AMMONIA.

As pointed out before, the quantity of ammonia in the urine is a measure of the acidosis present in the body. The estimation of the total amount of ammonia in the 24 hr. urine is the best urinary test for acidosis; yet, as Henderson [30] recently said, neither ammonia concentration nor urinary findings are safe guides. As soon as alkali therapy is started the excreted ammonia falls in amount. The normal amount of ammonia in the urine varies between 0.5 and 1 gram, the ratio between the ammonia nitrogen and the total nitrogen in the urine is and remains fairly constant at about 1 to 25, or 4 per cent. Two tests are given for the determination of ammonia. Though both are simple, the titration method is best suited for office work, its results being reliable though usually slightly too high.

8. Treatment of Diabetes: Jour. Amer. Med. Assn., 1916, lxvii, 1021.
9. Folin, O.: Jour. Biol. Chem., 1907, iii, 177; Jour. Amer. Med. Assn., 1907, xlix, 128.
30. Henderson, L. J.: Jour. Amer. Med. Assn., 1916, lxvi, 1884.

(a) *Folin's Method for Determining Ammonia (Joslin's Modification)*[10] (Fig. I).

"Of the urine to be tested 1 or 2 c.c. are pipetted, by means of an Ostwald pipette, into tube A. Two or three drops of kerosene and a few drops of potassium oxalate, potassium carbonate solution (which contains 15% each), are added and the stopper quickly inserted.

"By means of a suction pump the ammonia is drawn over into tube B, which contains 10 c.c. of N/70 hydrochloric acid. Tube A is connected with a wash bottle containing 10% sulphuric acid, so that when the air is drawn through the urine it will be completely ammonia-free.

"For the first minute aeration should be slow, then the air current may be as rapid as the apparatus will stand. Aeration should be complete in from twenty to thirty minutes and the excess acid is titrated with N/70 sodium hydroxide. The amount of acid used by the ammonia times 0.0002 gives the amount of acid used times 0.00024 gives the amount of ammonia in the quantity of urine (1.0 or 2.0 c.c.) used for the test, and from this the amount of nitrogen or ammonia in twenty-four hours may be easily computed.

"The glass tube which passes nearly to the bottom of tube B is sealed at the lower end, but contains a number of small holes, which allow only fine bubbles to pass into the receiving acid and thus aids in the complete absorption of the ammonia."

(b) *Ronchese-Malfatti Method for the Determination of Ammonia.*

"(a) To 25 c.c. of urine in a 200 c.c. Erlenmeyer flask, add about 25 c.c. of distilled water, about 10 grams (1 to 2 teaspoonfuls) of powdered potassium oxalate, and a few drops of indicator (phenolphthalein). Shake a few times to dissolve the oxalate, then titrate with one-tenth normal sodium hydroxide until the first faint pink color is permanent.

"(b) Take 5 c.c. of commercial formalin solution in a test-tube, add a few drops of phenolphthalein indicator, then titrate with one-tenth normal sodium hydroxide until a faint pink is obtained.

"(c) Add this neutralized formalin to the urine, which has just been titrated, and titrate again with one-tenth normal sodium hydroxide until the previous pink is again obtained.

"Calculation: The number of cubic centimeters of one-tenth normal alkali used in titration (c) multiplied by 0.0017 gives the number of grams of ammonia in 25 c.c. of urine.

"No account need be taken of the amount of sodium hydroxide used in titrations (a) and (b).

"The method depends upon the fact that formalin combines with free NH_3 and forms hexamethylenetetramin. The ammonia is liberated from its salts by means of NAOH."

10. Joslin, E. P.: Treatment of Diabetes Mellitus, 1916, Lea & Febiger; Arch. Int. Med., 1915, xvi, 693; Amer. Jour. Med. Sc., 1915, cl, 485.

(3) CARBON DIOXIDE TENSION OF THE ALVEOLAR AIR.

Marriott's[11] method for determining the alveolar CO_2 tension is by far the easiest of reliable tests for the investigation of the alkali reserve of the body. The normal CO_2 tension in the alveolar air is about 46 mm. of Hg., 35-30 indicating a slightly dangerous acidosis and 30-20 showing danger of approaching coma.

MARRIOTT'S TECHNIC FOR DETERMINATION OF ALVEOLAR CO_2 TENSION.*

"With an ordinary atomizer bulb, which will deliver approximately 50 c.c. of air, force approximately 600 c.c. of air into the 1000 c.c. rubber bag and clamp the outlet tube with the pinchcock. While the subject is at rest and breathing naturally and at the end of a *normal* expiration, place the tube in the subject's mouth and close his nose, allowing him to beathe from and into the bag four times in twenty seconds, emptying the bag with each inspiration; the observer should indicate when breathing should be in or out. More frequent breathing will not greatly alter the results. After breathing twenty seconds, at the end of an expiration and while the bag is inflated, clamp the tubing with the pinchcock and use the air contained in the bag for analysis. The analysis should be made within three minutes, as carbon dioxide rapidly escapes through rubber.

In the case of comatose patients, the 1500 c.c. rubber bag should be inflated with at least one thousand cubic centimeters of air. The comatose patient should be allowed to breathe out of and into the bag for at least thirty seconds, since it is not feasible to have him completely empty the bag of air, at each inspiration. It is necessary to use some form of mask.

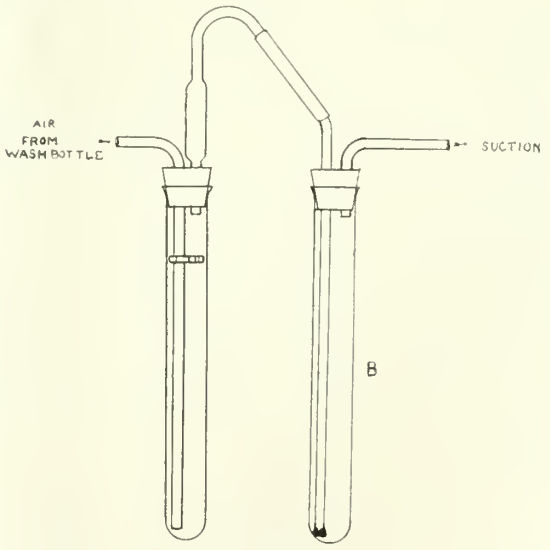


Figure 1.
Folin's aëration apparatus for determination of ammonia (Joslin).

11. Marriott, W. M.: Jour. Amer. Med. Assn., 1916, lxvi, 1594.

* Note: These directions apply to the apparatus which can be obtained from Hynson, Wescott, and Dunning, Baltimore, Md.

A mask is also necessary for collecting alveolar air from infants. This may be improvised as suggested by Dr. Marriott.

TECHNIC OF ANALYSIS.

Fill the test tube one-fourth full with standard bicarbonate indicator solution. (This solution may be used for several determinations provided it has not been diluted or in any other way contaminated.) Then place the capillary nozzle tube in the outlet tube of the bag and, by releasing the pinchcock, allow the alveolar air from the bag to pass rapidly through the solution in the test tube for about one minute or until no further color changes occur. The tube is then stoppered and the color immediately compared with that of the standard solutions, by placing it in the center section of the comparison box and the standard solutions most nearly approaching its color on either side. Examination should be made, if possible, at temperatures from 20 to 25 C. (68 to 77 F.); if the room temperature is above or below this, the specimen should be immersed in water at about 25 C. while being saturated with the gas being examined.

Duplicate tests should be made since errors in technic lead to too low rather than too high results.

Fredericia's [12] Method is another simple way to determine the alveolar CO_2 tension. The reader is referred to his original article and especially to the excellent description of the technic which Joslin [10] has included in his recent book. For a hospital this method is excellent but for the practitioner Marriott's Method is far better.

Haldane's [13] apparatus estimates the CO_2 tension very simply in samples of air collected by the Plesch method modified by Higgins. But the apparatus is somewhat expensive and only suitable for larger laboratories.

Walker and Frothingham [14] have shown that results obtained by analysis of alveolar air by Haldane's apparatus check up with the results obtained by Van Slyke's method of analyzing blood plasma. But the alveolar air determinations are subject to small variations. Peabody [6] mentions slight variations due to diet, the CO_2 tension being high with a carbohydrate diet and lower with a protein diet. Altitude also affects the CO_2 tension slightly. Stillman [15] has pointed out that this alveolar CO_2 tension is an accurate indication of the alkali reserve in the blood only when respiration and circulation behave in an entirely normal manner, increased ventilation of the lungs or dyspnoea lowering the CO_2 tension. Thus the most accurate method for determining the alkali reserve of the blood seems to be by Van Slyke's method.

(4) CARBON DIOXIDE TENSION IN THE BLOOD.

Van Slyke's method directly estimates the amount of CO_2 the plasma can take up and thus the alkali reserve of the blood. I have found this method together with the former one of Marriott's the most suitable and accurate at present available to complete our knowledge of the acid condition which is to be obtained from the ferric chloride and ammonia determinations in the urine. Van Slyke has not published the technic of his method himself though he has written a description of it for Dr. Joslin's recent book.[10] A brief account of this method has been recently given by Macleod.[22]

VAN SLYKE'S METHOD FOR DETERMINATION OF CO_2 TENSION IN BLOOD PLASMA.* (Fig. 2.)

"Blood is centrifuged and a few c.c. of the plasma shaken in a flask containing 6% CO_2. Alveolar air is suitable for this purpose. The apparatus is meanwhile filled to the top of the graduated tube with mercury by raising the mercury reservoir F, care being taken that D and E are also filled. One c.c. of the CO_2-saturated

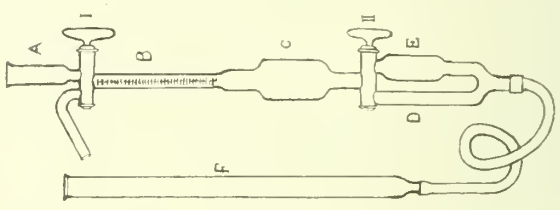


Figure 2.
Van Glyki's apparatus for determination of CO^2 Tension in Blood Plasma (Macleod).

plasma is then delivered into A and the stopcock I turned so that by cautiously lowering the level of the reservoir F, the plasma runs into B (but no trace of air). The same procedure is repeated with 1 c.c. water, so as to wash in all of the plasma, and finally 0.5 c.c. normal acid (approximately 5% H_2SO_4) is sucked in, after which stopcock I is turned off. The reservoir F is then lowered sufficiently to allow all of the mercury, but none of the blood, to run out of B and C.

"As the level of the mercury falls in B and C, the plasma effervesces violently, because it is now exposed to a vacuum. To be certain that all traces of CO_2 have been dislodged from the solution, the apparatus is shaken. To ascertain how much CO_2 has been liberated, stopcock II is now turned so as to bring C and E into communication, and by cautiously lowering the reservoir the fluid in C is allowed to run into the bulb E. Stopcock II is thereafter turned so as to connect C and D, and the reservoir raised so that the mercury runs into C as far as the CO_2, which has collected in the burette, will permit it to go. After bringing the level of the mercury in F to correspond to that in the burette, the graduation at which this stands is read. It gives the c.c. of CO_2 liberated from the plasma. Under the above conditions normal plasma binds 65.90% of its volume of CO_2: therefore indicating 53 to 77 volume per cent. of CO_2 chemically bound by the plasma. Figures lower than 50% in adults indicates acidosis."

12. Fredericia: Berl. klin. Wchnschr., 1914, ii, 1268.
13. Haldane & Priestley: Jour. Physiol., 1905, xxxii, 225.
14. Walker & Frothingham: Arch. Int. Med., 1916, xviii, 304.
15. Stillman, E.: Amer. Jour. Med. Sc., 1916, cli, 505.

* This apparatus can be obtained from E. Greiner, 55 Fulton street, New York.

Marriott[16] has recently described a method for the estimation of CO_2 tension of the blood plasma. The apparatus and technic are simple but do not assure the same degree of accuracy as does Van Slyke's method.

(5) The alkali reserve or the buffer action of the blood might be determined accurately and easily by titrating serum between two H-ion concentrations by means of indicators in a manner similar to the method by which Marshall[17] has recently determined the buffer action of saliva. I expect to report some observations with this method in the near future.

Sellard's[18] "alkali tolerance" test gives a fairly accurate idea of the degree of acidosis present in the body, but it cannot be well used in diabetes since it uses sodium bicarbonate, which is objectionable as a routine.

Sellard's[19] test for titratable alkalinity was of definite clinical value until Marriott's and Van Slyke's more applicable methods appeared.

Levy, Rowntree and Marriott's[20] simple method for the determination of the H-ion concentration of the blood is easy to carry out, but does not yield as valuable information as does an estimation of the alkali reserve of the blood either directly or by the alveolar air analysis.

Levy and Rowntree[21] have also proposed a method to estimate the buffer action of the blood directly which is briefly given by Macleod[22] in a recent article in which he mentions some very evident drawbacks.

Van Slyke, Stillman and Cullen[23] recently proposed a method the details of which have not been published, which evidently will be free from some of the objections to the former method.

TREATMENT.

In beginning the treatment of any diabetic, it is most important to investigate thoroughly the power of elimination of acids by the body. This precaution deserves special emphasis. A routine ferric chloride reaction, ammonia determination, a determination of the alveolar CO_2 tension, or better of the CO_2 tension in the plasma should be made. As the cases at the Rockefeller Hospital have shown, acidosis may develop during fasting and therefore these laboratory investigations should be continued throughout the treatment.

All writers agree that our aim should be to prevent rather than treat acidosis. Several measures have been found useful in doing this.

(1) Joslin[10] prevents acidosis in many cases by eliminating the source of supply of acid bodies. This he does by cutting out the fats from the diet and gradually eliminating the proteins and finally the carbohydrates from the diet. Sugar often disappears without fasting, and if a fast is necessary, it is of short duration, and acidosis is not so likely to develop. This procedure is routine with Joslin. It is especially important in the obese, in diabetes of long standing, in patients with damaged kidneys, in children not accustomed to fat, in cases of infection and operative cases.

(2) Acidosis can be prevented if the patient's tolerance for carbohydrates can be improved, which is usually the result of correct modern treatment. Luthje's remark that one need not worry about acidosis when sugar is absent from the urine has some truth.

(3) To prevent acidosis in very fat individuals, a great weight reduction, thus doing away with the fat from which acid bodies might be derived, is often necessary.

(4) Alcohol was formerly given routinely by Allen[24] during fasting to prevent acidosis. But recent work by Higgins, Peabody and Fitz[25] indicates that alcohol has no apparent effect on the acidosis induced in normal subjects by taking a carbohydrate free diet and it is not settled that such an effect occurs in diabetics. Thus Allen[26] recently said that its use is valuable but not essential. Joslin gives it in his fasting treatment only when the patient is uncomfortable without it.

(5) In building up the diet after the fasting period acidosis can be prevented by the inclusion of as much carbohydrate as the patient can stand without a return of sugar in the urine.

When moderate acidosis is present as determined by complete laboratory tests, the following measures may help to dispel it:

(1) *Fasting.*—In using this method the alkali reserve of the blood should be closely watched for some cases of acidosis are aggravated by fasting. Foster[27] lays stress on these dangers from fasting. Allen says the most suitable cases for this method of dispelling acidosis are those that come in with acidosis, not having been on a strict diet. A remarkable case showing this is that reported by Geyelin and Du Bois,[28] well worth studying.

(2) *Feeding of Carbohydrate-Protein Diet.*—When acidosis is found by laboratory analysis to increase with fasting, then feeding of green vegetables and small amounts of protein is indicated.

(3) *Intermittent Feeding and Starvation.*—Joslin is able to dispel acidosis by this method which Folin and Denis[29] recently found was effective in destroying acidosis brought on by starving obese women.

(4) *Weight Reduction.*—Stillman[15] and Allen[26] emphasize the importance of great losses in weight especially in fat chronic diabetics in order to make acidosis disappear.

16. Marriott, W. M.: Arch. Int. Med., 1916, xvii, 840.
17. Marshall, J. A.: Amer. Jour. Phys., 1915, xxvi, 260.
18. Sellards, A. W.: Johns Hopkins Bull., 1912, xxiii, 289.
19. Sellards, A. W.: Johns Hopkins Bull., 1914, xxv, 101.
20. Levy & Rowntree, & Marriott: Arch. Int. Med., 1915, xvi, 389.
21. Levy & Rowntree: Arch. Int. Med., 1916, xvii, 525.
22. Macleod, J. J. R.: Jour. Lab. and Clin. Med., 1916, ii, 54.
23. Van Slyke, Stillman & Cullen: Proc. Soc. Exper. Biol. and Med., 1915, xii, 165.
24. Allen, F. M.: Jour. Amer. Med. Assn., Sept. 12, 1914, 939.
25. Higgins, Peabody & Fitz: Jour. Med. Research, 1916, xxxiv, 263.
26. Allen, F. M.: Amer. Jour. Med. Sc., 1915, cl, 480.
27. Foster, N. B.: Amer. Jour. Med. Sc., 1916, cli, 176.
28. Geyelin & Du Bois: Jour. Amer. Med. Assn., 1916, lxvi, 1532.
29. Folin & Denis: Jour. Biol. Chem., 1915, xxi, 183

(5) *Increase in Diet.*—Geyelin has found that some chronic cases of acidosis are helped by an increase in the caloric intake.

Alkali should only be given when laboratory tests show danger of approaching coma, i. e., more than 2.5 grams of ammonia and a CO_2 tension of 30 mm. of Hg. If the danger is slight, only small doses should be given until the CO_2 tension has been definitely raised. Allen and Joslin both emphasize the danger of too large doses of alkali. Joslin has only given 66 grams of bicarbonate in the last nine months, and that only to two patients.

But when coma is threatening, alkali should definitely be given. The section in Joslin's book on the treatment of coma should be consulted by all who wish to have a comprehensive modern idea of this important subject. He lays stress on putting the patient to bed, keeping him warm, and at rest. Bowels should be emptied. Elimination of acid bodies should be encouraged by a large fluid intake by mouth and colon and if necessary intravenously. A large amount of alkali should be crowded into the patient preferably by mouth but if this is impossible intravenously. Digitalis and caffein should be given to support the heart and morphine to control the nerves.

CONCLUSION.

The importance of laboratory examinations of the urine, alveolar air, and blood in the diagnosis of acidosis and the conduction of the starvation treatment should be fully realized.

THE ETIOLOGY OF PELLAGRA.*

By J. E. JENNISON, M. D., San Diego.

Pellagra is of more than academic interest to physicians residing in San Diego, as may be evidenced by the fact that I alone have seen at least nine cases of this malady during the last six years.

The etiology of pellagra has been as elusive as the Irishman's flea, of which he remarked, "Ye put yer finger on it and it ain't there." I will not attempt to review in detail the various theories which have been advanced, as that would make my paper far too lengthy for one evening's consideration. I will, however, refer to some of them very briefly, and then lead up to certain observations of my own, and from these I will venture my personal opinion as to the probable etiology.

The Zeist theory—that pellagra is caused by the consumption of spoiled corn products—held sway for more than 200 years. It was probably first advanced by Gaspar Casal of Spain in 1762, and under the skilful elaboration of Lumbroso, late in the 19th Century, it finally met with almost universal acceptance. At a somewhat later date, in our own country, Dr. Bass of New Orleans lent further support to the Zeist theory by producing experimentally what he believed to be pellagra, in chickens, by feeding them meal made from spoiled corn. Isadore Dyer confirmed these observations. The relationship between pellagra and spoiled corn seemed well established by these and many other physicians. But the true nature of the etiological factor still remained a subject for much discussion and difference of opinion. Lumbroso contended that pellagra was caused by certain toxins formed in spoiled corn, by the action of saphrophytic bacteria, which in themselves were harmless.

Other investigators attributed the disease to the direct action of bacteria, and many different bacteria were from time to time isolated from corn and its products, in the belief that they were the specific germs of pellagra.

At this juncture, Sambon, representing the British Pellagra Commission, appeared on the scene, with the declaration that pellagra was not due to the consumption of spoiled corn at all, but that it was an infection, due to some protozoan implanted in the blood-stream by some blood-sucking insect, possible sand-fleas, and he presented much plausible evidence in support of his views.

A little later, in the United States, the Thompson-McFadden Pellagra Commission, acting under the auspices of the New York Post-Graduate Medical School, also discredited the spoiled-corn theory, and in its report to the American Medical Association at Atlantic City in 1914 they reported in substance, as follows:

1. That pellagra was not caused by a corn meal diet, either good, bad or indifferent;
2. That no causative relation could be found between pellagra and any form of diet;
3. That a diet rich in fresh meats and eggs would not prevent it (Of this statement I will make further mention later.);
4. That pellagra was communicated from person to person.
5. That it was most prevalent in communities having open surface privies.
6. That it was essentially due to faulty disposal of sewage.

These conclusions would of course warrant the assumption that pellagra was caused by some living micro-organism, carried in some manner from these privies to the patients.

Attempts to connect the etiology of pellagra with the dietary continued however, and readers of medical literature noted about this time the frequent appearance of a new word, viz., Vitamines. Beri-beri, we were told, is caused by a diet from which these vitamines have been removed by the act of polishing rice. In like manner we were told that the modern process of milling corn destroyed these vitamines, by excessive heat, thus making a corn-meal diet provocative of pellagra, because of a deficiency of these very vitamines.

Most remarkable, because the most sweeping in its assertions, was the theory advanced by Dr. Joseph Goldberger, of the U. S. Public Health Service, and publicly announced by that department on November 12th, 1915. He concluded that a lack of animal and leguminous protein was the prime factor in the causation of pellagra, and particularly based this conclusion upon the results of experiments, notably two: the first, where 171 out of 172 pellagrin inmates at two orphanages

* Read before the San Diego County Medical Society, August 1, 1916.

were apparently cured of pellagra by a proper regulation of the diet, and without the use of medicine; the other, at a convict camp where eleven healthy convicts were purposely placed upon a diet deficient in animal and leguminous proteins, with the result that in five months six of these convicts developed pellagra, and that, while no cases developed in any of the other convicts of the camp, of which there were many.

Thus it would seem that Goldberger could induce pellagra or remove pellagra whensoever he was so disposed, by simply juggling the protein constituent of the dietary. Could proof be more convincing than this, that pellagra was not caused by the consumption of spoiled corn-meal in particular, nor by the bite of any disease-carrying insect, but that it was caused by a deficiency of certain elements of the diet? Not much time has been given us, as yet, to try out this theory, but recent medical literature is already showing evidence that the phenomenal results of Goldberger's experiments are not being duplicated.

Dr. A. W. Dumas of Natchez, Miss., reports in the July number of Clinical Medicine that he is finding pellagra as difficult to treat with the Goldberger diet as he formerly did without it. Also, Joblin and Peterson of Vanderbilt University, in the May number of the Journal of Infectious Diseases, takes issue with Goldberger. They specifically call attention to one family who conducted a grocery and butcher shop, to whom a daughter, suffering with pellagra, came home for a visit. The family consumed an excess of proteins both animal and vegetable. Eggs, ham, fresh meat and milk were partaken of freely, and yet a few months later two more cases of pellagra developed in this family. These investigators admit that the population of Nashville consumes much carbohydrates, but they assert that at least 68% of the 421 cases investigated by them gave a history of a diet sufficient in proteins and vitamines. They also call attention to the fact that the natives of Calcutta consume an average of less than forty grams of protein per day, of which only two grams is animal protein, and of course many fall far short of this very low average; and yet there is no pellagra in Calcutta.

Furthermore, they call attention to the fact that there are 12,651 open privies in Nashville. They therefore agree with the Thompson-McFadden Commission in connecting the etiology of pellagra with these privies.

Dr. Holmes of Chicago, representing the Illinois State Board of Health, gives us still another theory in the last March number of the Archives of Internal Medicine. He asserts that an excess of carbohydrates and a lack of lactic acid germs in the diet, leads to a pathological over-production of the bacillus Welchii, which finds a more or less natural habitat in the bowels, and that an excessive number of these same bacillus Welchii produce the symptom-complex of pellagra. He also surmises that the curative properties of the Goldberger diet were due not so much to the increase of protein but more especially to the presence of the lactic acid bacilli in the butter-milk which formed a part of the diet, thus providing an antidote to the bacillus Welchii.

This, briefly, brings a summary of the medical literature, appertaining to pellagra, up to date. That it leaves the etiology of pellagra unsettled is, I think, obvious. That the dietary is an important element in the treatment of pellagra, as indeed it is in any disease, no one will deny, and that it likewise is a factor in the etiology has been well established, both clinically and experimentally. But that it is the exciting factor, or the specific factor, if you please, I do not believe, for it would be passing strange indeed if the population of our Southern States suddenly adopted such a badly balanced diet in or about the year 1907, when pellagra first became known in those States, and still more strange is it that there was no pellagra in the South during the Civil War, not even at Andersonville prison, if a mere deficiency in protein food alone could cause pellagra. Nor does it seem probable that it was prevalent but not recognized and diagnosed prior to 1907, for Dr. Lavender of the U. S. Public Health Service made diligent search for it in various charitable institutions of the South in 1909, without finding a single case in those institutions; and yet in 1915 one of these same institutions had 10% of pellagrins among its inmates, according to the report of Jobling and Petersen already referred to. I therefore feel disposed to agree with Dr. Beverly R. Tucker of Richmond, Virginia, who, in Vol. I of the 26th Series of the International Clinics, gives expression to the belief that Goldberger's six convicts merely suffered a loss of nutrition, and consequently of resistance, as a result of the restricted diet imposed on them, and that inasmuch as they lived in a community where pellagra was prevalent they simply became the victims of an infection which they in their reduced condition were unable to throw off, just as they might have acquired tuberculosis had they been exposed to it. And it does seem that an impartial review of the latest medical literature should incline us to accept with a grain of salt Goldberger's statement about the alleged cure of 171 out of 172 pellagrous children with nothing more by way of treatment than the giving of a carefully selected and well-balanced diet. To me it prompts the query: "Were they really cured?"

I will now make a few observations of my own, which are not altogether original with me, but which I have often pondered over ever since my first personal experience with pellagra.

I wish to call attention to the close analogy between pellagra, of unknown etiology, and syphilis, of known etiology—the latter being, as you know, due to a protozoan.

Pellagra tends to chronicity—so does syphilis.

Pellagra exhibits lesions of both the skin and the mucous membranes—so does syphilis. (And in passing I ask you to stop and reflect how really few diseases do cause lesions of both skin and mucous membranes.)

Pellagra exhibits a marked symmetry in its cutaneous manifestations—so does syphilis, especially in its earlier stages.

Pellagra, when uninfluenced by treatment, is subject to periodic exacerbations—so is syphilis, though it does not manifest the seasonal variations of pellagra.

Pellagra causes first an exaggeration and later a loss of certain reflexes, notably the patellar,—so does syphilis.

Pellagra leads to marked degeneration of the central nervous system, causing incoordination of motor nerves as well as a terminal insanity—so does syphilis.

Pellagra exhibits marked tendency to relapse after apparent cure—so does syphilis.

Pellagra in its acute form, especially the so-called typhoid form, shows pronounced and almost immediate improvement under the administration of the newer arsenical preparations, and that irrespective of the dietary, insofar as I have been able to observe—and so does syphilis.

Pellagra is not so easily influenced by this form of medication after the central nervous system becomes involved—neither is syphilis, because the invading organism has gotten beyond the reach of the drug.

Form this analogy I contend that there may be a relationship between the etiology of pellagra and that of syphilis, and I hold to the opinion that pellagra is caused by some as yet unrecognized protozoon, and I base this opinion on:

1. The observations of Sambon.

2. The observations of the Thompson-McFadden Commission, which indicated the communicability of pellagra, though they did not especially hold out for the protozoon nature of the infection.

3. The close analogy existing between pellagra and syphilis, the latter being of known protozoon origin.

4. The fact that pellagra may be favorably influenced by anti-protozoon medication, irrespective of diet.

MALINGERING; ITS DIAGNOSIS AND SIGNIFICANCE.*

By JOSEPH H. CATTON, M. D., San Francisco, Cal.

Malingering is the act of knowingly pretending the presence or the absence of disease; of knowingly causing disease; or of knowingly protracting an existing disease; the disease being referred to the person himself.

EXAMPLES FOLLOW.

1. Patient claimed that exposure to draught in shop was followed by chilliness, and development of a rash all over the body. Syphilis was indicated. He denied exposure and genital sore. Examination of penis showed large sclerotic scar; and Wassermann was positive. This patient was a malingerer in that he pretended the absence of disease.

2. A patient complaining of headache which he knows is non-existant, is a malingerer because he pretends the presence of disease.

3. A person producing a diarrhoea by means of violent purgation, in order that he may be thought ill, is a malingerer because he has caused disease.

4. He who wilfully neglects to carry out orders for treatment is a malingerer, because he may protract existing disease.

Cases of out and out malingering are exceedingly rare; but cases in which there is a larger or smaller element of malingering are very, very common. Many a wife malingers a little, that she may receive sympathy from her husband. A love-sick girl causes her sweetheart to return to her, after a quarrel, by the timely occurrance of a headache, or the like. Many of our street beggars are malingerers. In private practice the condition is rarely seen, except in the case of the woman who claims tuberculosis in order that an abortion may be done; the user of morphine who furnishes the most varied complaints in his plea for medication; and the pregnant woman who has carefully memorized the typical history of a fibroid and seeks to have "it" removed.

An acquaintance with malingering is most important; and at this particular time for three main reasons; and they increase in importance in the order given.

1. Municipal and other charitable hospitals attract malingerers, and the wards of these institutions must be kept active.

2. With the advent of more and more legislation along the line of Workmen's Compensation, Employer's Liability and Social Insurance the doctor will be brought in touch with a greater and greater number of patients who will malinger, and

3. At this time of most vital importance; men will malinger against enlistment into the service of their country; and soldiers of this type, having enlisted, will seek to avoid duty.

As an example of the indigent who malingers in order to remain in a free hospital, the following case is cited:

Case A.: Patient admitted to the San Francisco Hospital because of pains in various joints. One knee had been swollen previously. There were at no time any local objective signs of joint disturbance; there were neither fever or leukocytosis. The patient was, however, completely worked up with the result that the only positive diagnoses were slight disturbance in a couple of teeth, and a slight anemia. Teeth were attended to and medication given for the anemia, but the joint complaints were still present after three or four weeks. On explanation to the patient that there was absolutely no cause for joint pains, they disappeared gradually, but there coincidently developed a rash. Latter was distributed on front of thighs, on left arm, and on left shoulder and consisted of easily recognizable scratch marks, none of which were out of the reach of her right hand. Patient overheard discussion as to the nature of these lesions and immediately assumed a typical attitude of defense. She gave up all her complaints and from then on, insisted simply that she had no place to go when she should leave hospital. The social status is usually the basis of malingering in these individuals; and the workers

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in social service must take the burden of eliminating these pretenders after they have been recognized.

As regards insurance; it has been the experience abroad and in this country, that with the carrying into effect of legislation for Workmen's Compensation and the like—the number of non-fatal accidents, the number of days of incompetency following, and the number of complications due to accidents in the industries—have rapidly risen. Formerly, a workman, realizing that he must get back to work in order to provide for himself and his family, had no inclination to delay things; but today he is sometimes better off when "sick" than well. For example:

Case B.: Caught arm in machine two years ago. At the time was making $90 per month. Had an operation to repair the superficial tissues of right arm: there remained a scar about four inches long across anterior surface of right forearm. He was given compensation of $25 per month and a job as watchman at $75 per month. Since that time he says he has had pain and anesthesia below scar and contracture of fingers of right hand; says he cannot open latter. Fingers were involved gradually and in succession from little finger toward thumb. Has seen fifteen doctors; had another operation in which it was proven the scar did not include the flexor tendons. When last seen, claimed the index finger had become completely flexed during the last few weeks, and was now immovable and that the thumb would probably follow. The following contradictions in his complaints and actions show that in certain respects he was a malingerer; in a measure also, a method of attack for detecting contradictions is outlined.

When asked to move right index finger, patient said: "I could not move that finger if it would save my life—if this house were on fire—if you placed $10,000 there before me, etc.," and so saying he kept his right index finger in almost complete flexion. But under the pretence of being a fellow patient, he had been seen, by the writer, to use his right index finger, alternately flexing and extending it, as he undressed; and was seen to quickly place it in "permanent" flexion when Dr. T. (whom he knew to be his examining physician) entered.

When Dr. T. extended the fingers of the patient's right hand the latter said: "If you had the excruciating pain I have, you would jump through the ceiling." But, during this "pain" there was no increase in pulse rate, nor change in facial expression indicating pain.

With his eyes closed, when his left arm was touched with a warmed forceps, he said: "That's so sharp it burns" and when his right arm below the scar was touched, "you didn't touch me." But, he denied having any feeling in the latter area, and should not have known when to say "you didn't touch me," as stimulation was not applied in rhythmic succession.

Having forced open his hand and placed a handkerchief under the fingers, he removed handkerchief, and his attention being diverted he kept all of his fingers partially extended. But he had said they were always flexed so as to approximate themselves to palm.

He was supposedly insensitive to pin pricks in certain area below scar, but when Dr. T. left room the pin pricks in the "analgesic" area were the source of much annoyance.

Said he had "grit to bear jabs of pin in the dead area" but it requires no grit to bear pain in an analgesic area.

Says the index finger is now going through the stage other three fingers have finished and that thumb will probably follow in two months. Observation showed two sorts of habits for this index finger, the normal when patient thought he was not being watched and the deliberately assumed when examination was being conducted. Evidence pointed to a diagnosis of malingering as regards both the contractures in fingers and the sensory disturbances in arm.

It is indeed a pity that malingering should be resorted to in an attempt to avoid service to one's country. The psychology of malingering is not yet clearly understood, but the physician today may play his part if in addition to making himself ready to recognize the simulator, he will take a most firm stand and not be a party to a faked illness; and above all, never when it would hurt his country. There has been an abundance of malingering in the great war. Ten cases of simulated appendicitis have followed three real cases in a week; there has been picric acid jaundice; scratched urethras and injections of canned cream to fake gonorrhea; coal oil injections for plegmons; self-inflicted wounds; vesicants rubbed into skin for dermatitis; Russians have, with instruments, stretched the inguinal rings to produce hernia; white of egg has been injected into bladder for albuminurea; temperatures have been raised by having hot water in mouth just before reading, shaking mercury toward higher readings and by friction with the tongue; even known tuberculous sputum has been passed along and placed in fellow patients' sputum boxes. Medical men must muster all of knowledge and skill that they may detect accurately and quickly any of these demoralizing practices.

This paper is, therefore, a plea, that recognizing the significance of malingering, especially at this time, each and every case shall have a complete history, must receive a most complete examination, have all indicated laboratory investigations, and the opinions of every specialist for whom an indication may appear. A thorough knowledge of malingering presupposes a thorough knowledge of anatomy, physiology and pathology; and of clinical medicine, surgery and the specialities. This communication will attempt to point out only some of the broader considerations of malingering, not concerning itself with the specialties nor with detail.

The malingerer most often includes in his complaint, symptoms referable to the nervous system and for the purpose of this discussion patients will be regarded as: 1. Those having organic disease;

TABLE 1.

	Functional Disease and Malingering	Organic Disease.
Complaints,	always disabling,	not necessarily disabling.
Syndromes,	all atypical, vary from time to time, no anatomic basis,	tend to be typical, fairly constant, maybe progressive. anatomic basis.
Mental Condition and Attitude	may not desire to get well, maybe resistance to getting well, tend to simulate, defective health conscience, exaggeration of symptoms, statements not reliable, may take up an impossible symptom when suggested to them.	no tendency toward these.
	(in case of head injury may remember events right up to and right after accident)	usually amnesia of events immediately before and after accident.
Reaction of degeneration,	absent,	maybe present (depending on lesion).
Muscle Atrophy,	maybe, from disuse,	maybe, organic.
Flaccidity,	maybe, without wasting,	with wasting.
Contractures and Spasticities,	may disappear under chloroform,	do not disappear under chloroform.
Tremor,	maybe, usually accompanied by dyspnoea and tachycardia.	maybe; has accompaniments, as of multiple sclerosis.
Sensory Disturbances,	may include mucosae, do not follow anatomy, areas vary, areas may be sharply delimited at mid-line.	usually do not. in segmental, root or peripheral nerve areas. areas tend to remain constant. usually are not.
	PAIN, usually no accompanients except "faces" and wiggling, etc.,	usually accompanied by, changes in pulse rate especially increase, general restlessness, characteristic facies, flushing or pallor of face, change in blood pressure especially rise, and dilatation of the pupils.
	PAIN, ever long period may not lessen appetite, nor weight.	always leads to loss of sleep, appetite, and weight.
True Incontinence,	never,	maybe, if proper lesion.

TABLE 2.

Malingerer.	Hysteric.
Knows lesion to be false,	Believes lesion true.
Lesion more disabling,	lesion less disabling.
Hesitates,	answers without hesitation.
Contradicts self,	not nearly so marked.
Gets confused,	not same tendency.
Indefinite,	definite.
Attempts to conceal number of sources of benefit,	not usually.
Maybe, can't look examiner in face,	can do this.
Exaggeration conscious,	exaggeration unconscious.
No changes in sexual self,	changes in sexual self, maybe.
Shrinks before he is touched,	awaits definite testing.
"Starvation," but daily urine and stool!	Starvation with appropriate symptoms and signs.
"Yes-no-pin-test" maybe present,	absent.
(Have patient close eyes. Tell him quickly that you are going to prick him with pin, and to say "yes" when he feels it, and "no" when he does not. The malingerer frequently says "no" when he is touched in an area which he claims is analgesic!)	
Electrode test positive,	electrode test negative.
(Use faradic current. Have break key in one electrode. Suppose patient claims a tender area in back; apply current to various portions of back, and having the coil still humming, shut off current in electrode and touch tender area. Frequently malingerer in his confusion answers that the "current" hurts him here more than in other areas.)	
Mapped out areas of sensory disturbances, may differ markedly at different examinations	Differ very little on repeated examination.
"Limitation" of movements of spine, etc., not constant.	More constant.
Sensory disturbances anywhere,	Tend to be glove-like.

2. Those with non-organic or functional disease, and 3. Those with no disease, the malingerers.

It is convenient, first, to differentiate organic disease on the one hand, from functional disease and malingering on the other, as the latter have much in common.

And, in addition, these signs must have an organic basis: Argyl-Robertson pupil; unequal pupils (synechiae, etc. having been excluded); optic neuritis; persistant fast or slow heart; and a positive Wassermann or other positive laboratory findings. If patient's attention has been distracted, without doubt, and a Romberg is present, it is a sign of organic disease.

The table above shows that malingering has much in common with functional nerve disease, and that with it, it may be differentiated from organic disease. It then becomes necessary to differentiate malingering on the one hand, from hysteria, neurasthenia, psychasthenia and the traumatic neu-

roses on the other. The psychasthenic is rarely a conscious simulator. Traumatic neuroses are usually combinations of neurasthenic and hysteric symptomatology. The neurasthenic has many symptoms without organic basis, but his usual truthfulness is a good differential point. It is the differentiation of hysteria and malingering that is most difficult. The two conditions are, of all the non-organic conditions, most closely related. The table above shows many things they have in common; the hysteric tends on top of his hysteria to become a malingerer; if the malingerer simulates fits, they resemble hysterical ones. The following table, however, brings out certain of the differences.

So much for differentiation; but a warning. One must be thorough in investigation; avoid bias toward sympathy on the one hand, or harshness on the other, as examinations proceed. The final opinion must be honest; it must be firm. Every effort to gain information must have been used before branding a man a malingerer. For example:

Case C.: Woman, age 42 years, began to have malaise, irritability and crying spells, some slight gastric upsets and occasional constipation. One of the best clinicians in San Francisco, said: "Entire examination being negative, excepting a very slightly enlarged liver, I am looking on the case as one of nerve fag more than anything else and have prescribed accordingly." Symptoms, however, continued, and newer investigations disclosed a carcinoma of the cervix uteri, which was operated upon immediately.

Case D.: Patient in San Francisco Hospital. Numerous vague and varied complaints. After three months' investigation, nothing more than "flat feet" had been diagnosed. Patient was discharged as a malingerer. Returned after one month with same symptoms and visiting physician reported "very, very small amount of fluid in each chest and in abdominal cavity." Tapping of right pleural cavity and of peritoneal cavity gave specimens which on injection into guinea pigs produced tuberculosis.

As a sort of summary, it is useful to keep the following in mind:

STATUS.

Is patient being benefited by appearing ill? What insurance and compensation is there coming to a lodge member or working man when ill? Is the patient making more when sick than well? It must be kept in mind that by malingering, the underfed may eat; the hard worker may loaf; beggars make easy livings; the morphine user gets his medication; the indigent gets hospital care; and the soldier may be freed from duty.

FAMILY HISTORY.

Look for other neuropaths.

GENERAL CHARACTERISTICS.

Usually the malingerer is a neurotic, introspective, imaginative, pessimistic, hesitating, contradicting, confused, suspecting, indefinite, calculating, exaggerating individual; with a very disabling complaint and a very loquacious vocabulary to describe it; and he insists on looking at his lesion while he talks of it, of liability, the shame of his being out of work and the like.

HISTORY.

Brings out atypical, inconsistent syndromes without anatomic or physiologic basis, and possibly the fact that the patient has not sought the best treatment, or having received expert advice, has not carried it out.

EXAMINATION.

Patients must be stripped. Examination must be most thorough. A man, undressed, has concealed a colotomy wound, made because of a rectal carcinoma,—by placing his hands on his hips and talking and laughing during his examination.

Have him observed while he undresses, through a concealed opening in a wall, a periscope, or better by another doctor or nurse. Divide his attention in an effort to get valuable signs and contradictions. This may be done at times by playing on his emotions, especially his characteristic ones. Record accurately and on different occasions the areas in which he complains of sensory disturbances, also the limits of joint motion. Have patient blindfolded for these examinations. The method of D'Arcy Power of using stereoscopic photography for permanent records is very valuable here. Try the yes-no-pin-test and the electrode test; or during a chest examination press stethoscope over supposedly tender areas without pain.

LABORATORY.

Either positive or negative evidence here is most valuable.

SPECIALISTS.

If malingering is suspected in the field of a specialist, appropriate consultation should always be called.

THERAPEUTIC TESTS.

Use of dark room and nauseating drugs; and the forbidding of reading and of visitors may verify a diagnosis.

In all investigations the potential disease must be kept in mind, just as definitely as the actual one. There must be recognized the aneurism that may rupture; the syphilis that may involve the nervous system; the tuberculosis that awaits trauma to locate itself; the neuropath who may become neurasthenic, and so forth: for the malingerer may find it advantageous to blame his new environment for his old complaints.

To conclude, the significance of malingering must be realized. It is a duty that physicians owe the State, insurance companies, employers and workmen and themselves; but most of all today—their country. A thorough knowledge of malingering is one of the vital pieces of equipment of the medical man as he serves his country in this war.

REMOTE EFFECTS OF BRAIN TRAUMA.

(Symptoms, Course and Prognosis.)

By HAROLD W. WRIGHT, M. D., San Francisco.

Naturally in this article acute abscess, acute pachymeningitis or leptomeningitis, mental effects of sudden compressions or the acute traumatic apoplexies are excluded. We have here to deal with late abscess or cyst formation, localized sclerosis, post traumatic epilepsy, psychasthenia, hysteria and the traumatic psychoses. These conditions are of great importance in connection with workingmen's compensation, chiefly because the onset of the permanent symptoms is usually weeks or months after the injury, and in the interval while resting from his usual work the patient may be apparently well. These cerebral defects resulting after injury are even more difficult of a fair interpretation than are the spinal cord disorders which also occur late and after a free interval. In cerebral injury and its remote effects we have to consider the personality of the patient, before the injury, e. g., the inherent defects and peculiarities which are aggravated by the trauma and the probable duration of the neurological signs which have become more evident since the injury. Tabes and general paresis or cerebrospinal lues may have existed in latent degree previous to injury and become aggravated by the shock or the other added effects of the trauma. The same may be true of epilepsy. A traumatic psycho-neurosis is a real thing and has a direct relationship to trauma and yet because of previously existing psychic defects it is difficult to estimate just how much the resulting disability can be attributed to the accident. For example, a neurasthenic or hysterical constitution may have added to it by trauma a distinct psychasthenia syndrome which is of indefinite duration and doubtful prognosis because of the pre-existing make-up of the patient. This difficulty is equally true of the traumatic psychosis in which there are many other possible contributing factors of causation to be considered.

ABSCESS AND HEMORRHAGIC CYST.

The onset of symptoms of abscess may be from three to five weeks after the head injury, but not infrequently, the interval is months and even years. English reports a case with autopsy ten years after the injury. During the interval the patient may suffer from indefinite subjective symptoms referable to the head, such as headache of variable character, attacks of numbness or tingling of one limb, temporary attacks of aphasia or recurrent convulsions, before any of the symptoms of infection appear. Later, acute symptoms, such as fever, slow pulse, vomiting, optic neuritis and paralysis, referable to focal lesions, occur. Of these symptoms, optic neuritis is the most important, being often unilateral and corresponding to the side on which the abscess is situated. There is a characteristic mental state of apathy and somnolence with periods of restlessness and confusion.

The course of these symptoms is progressive but often very slow, death resulting from chronic toxæmia or from bursting of the abscess into the ventricles.

The diagnosis has to be made from epilepsy, a psychosis, or tubercular meningitis.

What has been said of abscess is largely true, also of post-traumatic cysts which are the result of hemorrhage and softening of brain tissue. The course is, however, less progressive, the symptoms more focal and less general and the result a chronic epilepsy of Jacksonian type frequently, although general convulsions may also be the result of a focal lesion. Susceptibility to alcohol is increased by all head injuries of serious degree and the irritative effects of a cyst formation may be enhanced or produced by a moderate amount of alcohol.

TRAUMATIC EPILEPSY.

Aside from the Jacksonian form of epilepsy due to focal lesions of a hemorrhagic-cystic nature or to scar formation, epilepsy of the same type as the idiopathic form can result from brain trauma even when no symptoms or signs relative to a focal lesion can be demonstrated. In such cases one has to distinguish between a pre-existing epileptic status and true traumatic epilepsy and to do this a very careful history dealing with symptoms of masked epilepsy such as psychical aberration or petit mal attacks or undue susceptibility to alcohol must be elicited. Where such symptoms are present in the previous history, the relation of trauma to the epilepsy must be given a position of secondary importance. There is no way of deciding the degree of importance of this relationship, except from the personal history, as the signs and symptoms of traumatic epilepsy and "idiopathic" epilepsy are the same in numerous cases. It is only when we have signs of focal brain irritation or destruction that we can be sure of the cause being traumatic. Furthermore, it should be remembered that epilepsy of traumatic origin may manifest itself either in Jacksonian or generalized attacks or very late after the trauma. For example, English found 21 cases out of 300 which developed after a year, and of these only seven were of the Jacksonian type. The statistics of the Craig Colony for Epileptics show that out of over 800 cases, in only one was there evidence of a fracture of the base of the skull, showing how many cases there are in which the gross injury is very slight. In many cases we must regard the head injury as only a spark which ignites a pre-existing epileptic constitution and this is especially true of an alcoholic patient.

It should also be noted that many cases may be the result of fright and the attacks be really hysterical in nature. To distinguish between true epilepsy and hystero-epilepsy is not always easy, especially if the actual attack is not observed. None the less, hysterical epilepsy is a real disease and just as incapacitating as true epilepsy but the prognosis is infinitely better.

While the time elapsing between the injury and the onset of epilepsy is not a definite guide to diagnosis, we may consider an epilepsy arising

many years after the trauma as not altogether due to it, for in persons past middle life arteriosclerosis or cerebral syphilis may be the real basis for the attacks. Traumatic factors figure as causes chiefly in youth.

When the attacks are Jacksonian in nature from the beginning, and other causative factors, such as cerebral syphilis or alcoholism can be definitely ruled out the relation of trauma to the attacks is fairly certain even if the attacks begin months after the injury and even if there has been no fracture of the skull at the time. Most attacks have begun within one year from the date of injury but there have been notable exceptions to this rule, e. g., a case reported by Lloyd and Deaver, in which five years after an injury a young man of twenty-one developed Jacksonian attacks; his skull was opened and neither fracture nor gross evidence of brain injury could be found.

TRAUMATIC PSYCHASTHENIA.

This is a condition of real disability due chiefly to headache, dizziness, irritability and abnormal susceptibility to fatigue, not differing in character from symptoms of ordinary neurasthenia of the primary form. Such patients are often unjustly accused of malingering. The headache in these cases is the most distressing of the symptoms and the most unresponsive to therapy. It may be due to bony exostosis, meningeal adhesions or to slight luxations of cervical vertebræ. More often the headache like the other symptoms is the result of some minute change in the cortical cells (possibly the result of the œdema which follows concussion) impossible of demonstration except by the history and symptoms and the improvement which gradually occurs when the patient is made free from responsibility and anxiety over the outcome of his condition. Such cases under rest and diversion and abstinence from stimulants, will recover in one or two years, provided there is no antecedent neurasthenic or psychotic taint.

HYSTERIA.

This disorder, when of traumatic origin solely, is perfectly recoverable, but its duration is apt to be very uncertain and somewhat dependent upon the confidence the patient has in his physician, and the earlier the diagnosis is made, i. e., before all sorts of other diagnoses have been suggested. As was said above, it may be very difficult at times to distinguish between real epilepsy and the hysterical form. The other manifestations of hysteria may lead to erroneous treatment which prolongs unnecessarily the period of disability, i. e., unnecessary operative procedures for hysterical pain, etc.; or the conditions may be aggravated by too much therapy of another sort, e. g., plaster casts for hysterical joints.

The instillation of confidence in the future outcome, and the education of the patient combined with rational suggestive psycho-therapy, will do much to clear up the diagnosis as well as to shorten the period of disability which is real enough, even though hysterical. In this connection we must refer to the form of "traumatic" hysteria which subsides promptly upon the settlement of compensation. In Germany, by reason of intensive industrial legislation, this so-called "pension hysteria" has developed to a greater extent, perhaps, than in many other countries. This seems to be by reason of the German method of paying compensation, which continues during the period of disability, while other countries have a cash settlement basis. Thus, in Denmark the percentage recovering from traumatic neuroses is 93.6. In Germany it is only 9.3 per cent.

TRAUMATIC PSYCHOSIS.

The difficulty in assigning to trauma the leading or only role in the causation of any form of insanity is obvious. There are so many other factors concerned, e. g., alcoholism, syphilis, arteriosclerosis, epilepsy, and the inheritance of insanity. We are also confronted again with the fact that a true traumatic psychosis may occur very late after the injury. Pierce Bailey concludes from an analysis of the State Hospital statistics of New York, that trauma is an actual cause in less than one per cent. He bases this conclusion from the small percentage of instances of fracture of the skull in the histories of these asylum patients. However, there is, none the less, a true form of traumatic insanity of favorable prognosis in most instances, but of very uncertain duration. Its symptomatology is fairly definite and sets off the disorder from other more chronic forms of insanity as well as from other temporary forms.

Adolph Meyer has made the most complete study of this disorder on record, both from the literature and from personal observation of cases. He recognizes a true primary traumatic psychosis following definite head injury, and characterized in most cases by "a protracted delirium, partial disorientation, i. e., variations between clearness and haziness of the sensorium, a certain prominence of fabrications of dream-like situations, further difficulty of ready remembrance and calculation."

His cases are minutely described and analyzed. The main facts to be emphasized from an analysis of these cases and from other similarly studied are the following:

1. That the lesions are usually gross and productive of secondary degenerative changes, the latter being enhanced probably by the nutritional disturbance due to œdema.

2. That fracture of the skull or other external signs are infrequent.

3. That subsequent tumor formation, especially bony spurs of the endocranium, resulting from organized clot, may be the cause of continued symptoms after those typical of primary traumatic psychosis have disappeared.

4. That recovery from the psychosis, other things being equal, can be confidently predicted and the duration is usually about two months.

5. That "after effects" appear in many cases, characterized by marked irritability, forgetfulness and very distressing sensations in the head of a burning, creeping character or ordinary severe headache and dizziness aggravated by alcohol, to-

bacco, emotion or posture (vaso-motor instability). Also by slowness of thought, easy fatigue and inability to keep impressions. These symptoms disappear in time, but may last a year or more. If they do not disappear there are other complications, e. g., arteriosclerosis, not directly due to the trauma.

It is because of these comparatively mild after effects that such patients are often thought to be malingering. But the symptoms are so uniform and are demonstrated so consistently that a little observation of the patient under ordinary circumstances should soon decide this point. Such patients are reluctant to take part in any social activity; feel better when left alone; are incapable of sustained work or play and show a very pronounced irritability and also a marked degree of "absentmindedness," i. e., they easily forget instructions, messages or names, a disorder of attention being largely responsible for these "memory" defects. However, it is in these cases that one needs to be on guard against failing to distinguish a beginning general paresis so that in all such instances a lumbar puncture is warranted.

References:

English: "The after effects of head injuries." Lancet, 1904, Feb. 20.

Lloyd & Deaver: "A case of focal epilepsy." Amer. Journal Medical Sciences. 1888.

Pearce Bailey: "Disease of the nervous system resulting from accident and injury."

Adolph Meyer: "The anatomical facts and clinical varieties of traumatic insanity." Proceedings of American Medico-Psychological Association, May, 1903.

A REVIEW OF SOME OF THE LATER DEVELOPMENTS ALONG IMMUNOLOGICAL LINES *

By R. A. ARCHIBALD, D. V. S., Oakland.

In reviewing recent literature we are impressed with the fact that we are entering a new era in the study and treatment of infectious diseases.

When the vaccine therapy was first introduced by Wright and his co-workers we were quite enthusiastic, forming at that time strong opinions on specificity and believing that all infectious diseases should be treated solely upon a specific basis. Later studies, however, and taking into consideration the work of Abderhalden, Erhlich, Vaughan, Jobling, Petersen and others our opinions as to specificity have undergone decided modifications, so that even though we still believe specificity must be observed in following out vaccine therapy in the treatment of infectious diseases, we do not believe that specific treatment is the sole or even the main factor.

A review of some of the later developments along immunological lines shows that of all the numerous elements which enter into the physio-biological system of balanced reactions the most interesting from a physiological and pathological standpoint is the relationship existing between the proteolytic serum ferments on the one hand and the serum anti-ferments on the other. Unquestionably the increase or decrease of these elements has a vital influence upon normal metabolism.

It appears to be a well established fact that under normal conditions there is, and must of necessity be, a balanced relationship between these elements, and that any condition that interferes with this relationship will upset the normal metabolistic order of things and pathological changes due to functional deviation will inevitably be the result. If this be true, and there seems to be ample justification for this belief, then the big problem confronting the medical world today is how to control or maintain this normal balance between the ferments and the anti-ferments by increasing or decreasing either one as occasion requires.

It was formerly thought, that following the parenteral introduction of a bacterin or so-called vaccine, specific bactericidal or bacteriolytic substances were produced, whose function it was to attack the homologous invading bacteria, destroying them by the process known as lysis. As a result of this lytic action toxic end products became available and these toxic end products being specific, that is having a combining affinity for highly specialized cellular elements designated by Erhlich as cell or fixed receptors, become anchored to the cells, through the media of these receptors causing injury to the cells, which injury may be partial or complete, depending upon the amount of toxin available and the amount so anchored. If cells so attacked are not injured to the point of destruction they may undergo regeneration and during the process of such regeneration the cells provide against injury in the future from similar attacks. This protection is accorded by the formation of cell receptors or toxic combining elements in excess of the capacity of the cells. As a consequence this surplus is secreted or excreted into the surrounding body fluids becoming free receptors or anti-toxins whose mission it is to combine with the specific toxic elements before they have the opportunity of coming in contact with the cells. It was supposed in this way specific immunity became established.

However, it is now a well-recognized fact admitted even by Wright and his co-workers, that the therapeutic or immunological results, following the parenteral injection of bacteria, are not explained wholly on a specific basis as certain facts indicate that non-specific benefits result from bacteriotherapy. The possibility that the explanation for this effect is to be sought in the mobilization of non-specific ferments must be taken into consideration.

While the introduction of bacteria parenterally does, beyond question, stimulate the production of specific bacteriolytic substances and incidentally specific anti-toxic bodies, they do not apparently stimulate the production of specific proteolytic substances. It would seem logical in the light of recent developments and knowledge that as a result of bacteriolytic action upon the bacteria, substances of an-anti-tryptic character become available. These substances possess the property of inhibiting anti-ferments, thus removing all opposition to the normal ferments, permitting autolysis to take place and the consequent liberation of toxic end products which represent the result of cleavage of the individual's own protein elements.

In this connection we must bear in mind that

* Read at a meeting of the Alameda County Medical Association, September 19, 1916.

the splitting of any protein substance, whether it be a foreign protein that has gained access to the body proper accidentally, or autolysis or cleavage of native protein, gives rise to end products which are toxic in character and have a profound effect upon the functional activity of body cells.

Recent discoveries indicate that our former belief that bacteriolysis and proteolysis were synonymous terms was not well founded. Specifically speaking, these terms refer to or should refer to entirely different phenomena.

Bacteria that gain entrance accidentally into the body proper, or when introduced parenterally for immunological purposes, undergo specific changes of a bacteriolytic nature, changes that are now believed not to be true fermentation, but purely physical in character. Following this lytic action their protein content are rendered available, and undergo proteolysis which is considered to be a true fermentative process non-specific in character.

In addition certain elements, probably lipoidal in character, are liberated by reason of the change in the physical character of the bacteria and these lipoids have been proved to possess anti-tryptic characteristics. Hence, as a result of the bacteriolysis we have, first, the proteolysis of the bacterial proteins and, second, proteolysis of the individual's own proteins either of the blood or the tissues.

Jobling, Petersen and other workers have shown, as a result of their investigations, that in the case of the tubercle bacillus the lipoids which are prominent constituents of that organism have the power of completely inhibiting tryptic digestion, accounting for the lack of autolysis which is such an important factor in that disease. When, however, such lipoids are saturated with iodine their inhibitory effect is lost, the normal ferments become active, autolysis results and there is a breaking down of the tuberculous lesion.

For the purpose of emphasizing this point it might be said that we can remember when it was frequently the custom on the part of physicians in making a diagnosis of tuberculosis, to obtain specimens of sputum after the administration of a few doses of iodides. Iodine compounds were supposed to act as a sort of expectorant. In many cases the administration of iodides would cause the bacillus of tuberculosis to appear in the sputum. The reason for this may be explained by saying that the iodine combines with the anti-tryptic elements, the unsaturated lipoidal substances which are prominent constituents of the tubercle bacillus, thus inhibiting anti-ferments and allowing ferments to become more active, permitting cleavage or lysis of the tuberculous lesion and the liberation of tubercle bacillus from the tissues. In fact, many instances are on record where the administration of iodine in tuberculosis has caused rather severe hemorrhages and the conversion of latent tuberculosis into a progressive type, so it is apparent that iodine is not a good drug to use in tuberculosis. We are simply using iodine as an illustration to bring out a few points we desire to make plain. Iodine is frequently used in cases of syphilis where it is believed to have an absorbent action in the treatment of this and various other pathological proliferations. In the case of syphilis it has no direct effect upon the causative organisms of syphilis. Using our knowledge of ferments and antiferments in this connection we now believe that iodine simply brings about resolution or dissolution of the luetic lesion exposing the spirocheta pallida to the action of arsenic and mercury which are subsequently administered.

The study of the phenomena of anaphylaxis, particularly as to the source of the toxic substances which are responsible for the shock or reaction, has thrown much light on these problems. The question to be decided in this connection is the source of the toxin, the antigen, or heterologous protein, do these split products originate from the digestion of the individual's own serum or tissues; or is it not possible that both sources may be involved in the process?

Up to within a few months ago we believed anaphylactic shocks were entirely due to the introduction of heterologous sera. That is, in producing an allergic condition in an animal it was necessary to introduce the serum of another species of animal. For instance, take the blood serum of a horse and inject it into a guinea pig to-day, and then give another dose of horse serum in fifteen or twenty days, the second dose will kill the pig as quickly as a lethal dose of strychnine. We have proved in the last few months, however, that you can take guinea pig's blood and introduce it into another guinea pig and kill it just as though you had injected strychnine. In other words, we have been able to extract antiferment from guinea pig's serum, introduce such extracted serum into other guinea pigs, causing death of same.

The later hypothesis is probably correct, as the work of Bordet, Friedberger, Vaughan, and others show that the toxic split products of autogenous proteins and heterologous varieties, while both may be active at the same time, they are not identical, and further, the toxic end products of heterologous proteins are not true anaphylatoxins. That this last statement is probably true is evidenced by the fact that apparently the amount of heterologous protein sufficient to produce an anaphylactic shock in a sensitized animal does not contain in itself end products sufficient in quantity to directly produce the toxic manifestations characteristic of such reaction.

The explanation of the reason for this assumption is further based upon the fact that the ferment action of a serum is held in abeyance normally by the anti-ferments which are known to be unsaturated, lipoidal, anti-tryptic substances, the removal of which by lipoidal solvents removes the opposition to the action of the normal ferments, permitting autolysis of the serum proteins, and liberating toxic end products. These toxic end products are probably identical with the toxic end products that were formerly thought to be due to the cleavage of foreign proteins such as bacteria and other heterologous antigens.

In the study of the source of toxic substances

and their influence upon disease in general we must, in view of the above statements, consider that we are dealing with a multiplicity of protein substances, not only those representing the invading pathogenic organism, but also the individual's body cells both normal and proliferative (the result of pathological changes), which undergo autolysis yielding as the result of such lytic action end products that are toxic in character.

Applying these principles in a practical way we are taught that the clinical manifestations of a disease indicate the kind of cells, tissues, or organs involved undergoing injury or pathological changes, and by reason of the selective action of the toxic substance producing the injury, we are frequently able to definitely designate and point out the source of the toxic element. In studying the clinical manifestations of diseases, however, we are confronted with the fact that many of our clinical symptoms are common to a great many different types of infection and toxemias which simply goes to show that while we must work out the specific character of a disease, at the same time we must not overlook other factors that are equally if not more important. The point we particularly desire to emphasize is that we must abandon the idea that the toxin or toxins of a causative organism are solely responsible for the pathological changes brought about during the progress of an infectious disease.

In many of our infectious diseases, especially those characterized by productive changes, that is by cellular proliferation, an infinite, or inconceivable number of new cells are formed and these cells grow by utilizing the elements of the blood, chiefly the big protein molecule, and in their period of active multiplication they take from the blood what they need for the purposeful end of the cell and cast back into it unused portions. If the new cells are native to the part where they are formed then the cast-off products of their activity may be normal, though it is quite possible that they are formed in such quantities in so short a space of time that the ability of the system to deal with them is over-taxed. If we assume, however, that the cells are formed under pathological conditions and are not exactly like the normal cells from which they originated, then the possible harm done in their growth by abstraction and addition is even more readily conceived.

There is, however, a more important factor to be taken into consideration, in studying the fundamental causes of the symptoms of diseases; namely, degeneration of the new formed cells. Take, for instance, tuberculosis or typhoid, which are typical productive diseases in which cellular proliferation is well marked. In the case of these diseases we have myriads of new cells, constantly undergoing degeneration and parenteral protein digestion and as a consequence are throwing into the blood products that, if not qualitatively, are at least quantitatively abnormal. It is generally believed in acute miliary tuberculosis and in fact all other forms of tuberculosis, a large share in the production of clinical manifestations must be given to the substances liberated by the living and dying pathological cells. In the case of typhoid fever when we realize that while the normal lymph glands of the mesentery are scarcely appreciable to the eye in typhoid fever they may become as large as walnuts. The spleen, which weighs normally about 200 grams, in the typhoid individual becomes several times as large. When we contemplate this enormous increase in cells must we not consider it to be on a par with or even in excess of the enormous multiplication of bacteria? These cells, as we have already pointed out, are constantly undergoing parenteral digestion which results in split proteins toxic in character and are also excreting metabolistic products which must constitute an added burden upon the elements responsible for phagacytosis, proteolysis and elimination.

Pneumonia is another good illustration of a disease in which bacterial toxemia has perhaps been overemphasized to the exclusion of everything else. It would seem not at all improbable that most of the clinical manifestations of pneumonia are due to the exudate independently of the bacteria. Taking care of this exudate is a fermentative process and in as much as autolysis is an ideal example of parenteral digestion it would therefore seem that the end products, the result of this autolytic action might be and probably are responsible for many of the clinical manifestations observed in this disease. In this explanation we must, therefore, assume that the source of the toxic substances are not to be sought solely in the pneumococcus protein but that the pneumonic exudate itself consisting of an enormous amount of fibrin and leucocytic debris, a foreign mass, insofar as the lung is concerned, represents a matrix of probable toxic substances.

If time permitted we could go on and discuss many other diseases of the productive or cellular proliferating type, but the above examples will suffice to emphasize the point we are particularly desirous of bringing out at this time; namely, that the clinical symproms of an infectious disease are not all specific in character but that they may be, and probably are, a combination of bacterial and cellular toxemias and are not a result of the specific toxin alone.

Specific treatment, therefore, to assist in the production of active immunity or the use of a specific sera to bring about passive immunity which are methods only for the neutralizing of the specific toxic elements produced by the causative organism, do not provide for the neutralization of the toxic end products, the result of parenteral digestion of the individual's own serum and tissue proteins. While we do not wish to discredit the use of specific anti-bacterial preparations in the treatment of infectious diseases we do, in view of the above statements of probable facts, claim that the use of specific treatment is not in itself sufficient.

The Committee on the Prevention of Tuberculosis of the New York State Charities Aid Association was recently successful in getting the County Tuberculosis Hospital Law amended by the 1917 Legislature, making the erection of hospitals mandatory in counties having more than 35,000 population. The amendment was put through as a war measure, so that the state will be prepared to treat cases discovered in examining recruits or found in the Army itself.

The following conclusions are drawn from the experience of Canada:

"(1) Adequate medical examination for tuberculosis of all men considered for the Army.

"(2) Sanitorium care for the early cases rejected by the medical examiners should be provided by the state; and hospital care for the moderate and advanced cases thus discovered should be provided by the local communities, cities or counties.

"(3) Soldiers invalided because of tuberculosis should be kept under military discipline and required to go into tuberculosis hospitals for care and treatment. The institutions should be sufficiently numerous throughout the state so that the men may be placed in the hospitals that are close to the localities in which their kinsfolk reside, enabling the latter to see the men frequently, thus promoting contentment and a willingness to co-operate with the hospital authorities in pursuing the course of treatment."

Book Reviews

Roentgen Technic (diagnostic). By Norman C. Prince. St. Louis: Mosby Co. 1917.

This little book may be of value to the beginner in Roentgenology in giving him a rough guide to positions and exposures. It will soon be laid on the shelf and forgotten. The procedures described soon become a matter of routine and the electrical and theoretical considerations are more or less inaccurate.

It is, on the whole, an artless, if enthusiastic contribution to Roentgen literature. H. E. R.

Gynecology. Edited by E. C. Dudley and S. S. Schochet. Vol. 4 of Practical Medicine series for 1917. Chicago: Yearbook Publishers. 1917. Price, $1.35.

Contents.

General principles. Disorders of menstruation. Ovary. Displacements and injuries. Infections and allied disorders. Malformations and tumors. Sterility.

Pediatrics and Orthopedic Surgery. Edited by I. A. Abt and J. Ridlon. Vol. 5 of Practical Medicine series for 1917. Chicago: Yearbook Publishers. 1917. Price, $1.35.

Contents.

Pediatrics. Spine. Upper extremity. Lower extremity. War orthopedics. Miscellaneous.

Urology.—Diseases of the Urinary Organs, Diseases of the Male Genital Organs, and the Venereal Diseases. By Edward L. Keyes, Jr. New York and London: Appleton, 1917.

A very good history of the development and progress of urology could be had by a comparative study of this new edition and its predecessors. Van Buren, E. L. Keyes, Sr., and his scholarly son, the present author, are all distinguished urologists of their respective periods.

For almost half a century innumerable revisions and new editions have kept step with the rapid advances of the science and each one has registered the knowledge of its period in a conservative but complete manner, and been recognized as the standard of its time. The growth from a hybrid and discreditable venereology to a highly technical and creditable surgical specialty is nowhere better illustrated than by a comparison of Van Buren, Keyes' first edition, "Genito-Urinary Diseases and Syphilis," to this modern "Urology," which frankly disclaims any kin to the black plague, but requires hundreds of pages to elucidate the modern and brilliant science of renal diagnosis and treatment. The frequent association of lues with the sexual organs necessarily requires familiarity of the disease on the part of the urologist. This need is met in this edition by a short but practical summary in an appendix.

Many chapters of this nineteenth edition have been revised and rewritten in this 1917 tome. The chapters are logically and thoughtfully arranged and fully illustrated by 18 excellent plates and 214 drawings. A student of urology is impressed in reading the text by the fairness and good judgment shown in the presentation of the more recent advancements. One feels that all statements have been honestly and carefully tested in the light of actual experience. That they are, in addition, vouched for by the reputations of past masters, unless otherwise stated. The presentation carries a current personal worth as embodying the wide clinical experience of a born urologist of high scientific attainments in the fundamentals of medicine and surgery.

This new edition forms an ideal text-book for the medical student, a practical and valuable reference for the busy practitioners, or alien specialist, and a gratifying and wholesome stimulus to the urologist. F. H.

Syphilis and the Nervous System. By Max Nonne. Authorized translation from the second revised and enlarged German edition by Chas. R. Ball. Second American edition revised. Philadelphia and London: J. B. Lippincott Company. 1916. Price, $4.00.

A thoroughly good and comprehensive book written, as the author states, "out of the practice for the practice." The numerous illustrations deal mainly with the pathology of the subject and are satisfactory. Many case histories are cited from Nonne's wards at Eppendorf, Hamburg, and from the French and English literature.

Full recognition is given to the important work of Noguchi in demonstrating the spirochaetae in the metasyphilitic diseases. And since, in these latter diseases, the role of syphilis as a cause is no longer to be doubted, much of the discussion as to the etiology of both tabes and paresis could be advantageously eliminated. To this phase, however, much historic interest attaches. A spirochaetal toxin acting in a selective way on the nervous tracts (after the manner of diphtheria toxin) is the view still expressed as explaining much of the pathology of paresis and tabes.

The chapter on the modern laboratory study of the blood and cerebro-spinal fluid is of particular and timely interest. The laboratory conclusions have been critically checked up by clinical and pathological findings. In this chapter the technique of the four reactions, Wassermann in the blood, Wassermann, leucocytes and albuminous bodies in the cerebro-spinal fluid are minutely described. A chapter on salvarsan therapy has been added. The author shows no great enthusiasm as to the value of the newer arsenic bodies in nerve syphilis. He uses them, however, as they are commonly used in conjunction with mercury and the iodides.

The value of energetic treatment of the older sort in the early stages of syphilis as a means of preventing subsequent involvement of the central nervous system, is still questioned by numerous authorities, the author included. And it is still too soon to know whether the use of the newer diagnostic and therapeutic agents will influence this most important problem of late syphilis and metasyphilis. H. H.

Cancer—Its Cause and Treatment. By L. Duncan Bulkley, A. M., M. D., Senior Physician to the New York Skin and Cancer Hospital. Vol. 2. Published by Paul B. Hoeber, 1917, New York. Price, $1.50.

This book is a continuation of a previous book on cancer by the same author, and is a series of lectures given to the Wednesday afternoon clinic at the New York Skin and Cancer Hospital.

Dr. Bulkley's belief differs greatly from the accepted ideas on the subject, as he does not consider operation necessary or advisable. His cures consist mainly of a diet, published for the first time in this book. Meat, milk, and eggs, the principal proteid foods, are entirely avoided. The diet is absolutely vegetarian, excluding also coffee, chocolate, cocoa, and all alcoholic drinks. Cereals cooked for hours and served with butter and salt, is one of the principal items in the diet list, made out in detail for one week.

Some medical treatment (not specific in any way) accompanies the diet and with hygienic measures, he cites cases cured without operation, and claims if the proper treatment continues, cancer cannot redevelop. This does not apply to recurrent and inoperable cancer. He asserts that the total number of cures in reasonable cases to be far greater under his line of treatment than under that most commonly employed. E. H. W.

Modern Milk Problem in Sanitation, Economics and Agriculture. By J. Scott MacNutt, lecturer on Public Health Service in the Massachusetts Institute of Technology. New York: Macmillan Co. 1917. Price, $2.00.

The author covers the progress of the last 21 years toward clean milk. The elimination of the use of preservatives and addition of water for commercial purposes is the first step in the progress. The standard set in 1896 by the first Medical Milk Commission of Newark, New Jersey, is the second step. Clean milk (under 10,000 bacteria to the cc.) from healthy cows (non-reactors to the subcutaneous tuberculin test) and a constant supervised production has been certified to the public by the medical profession. Mr. MacNutt gives credit for the stimulus certified milk has been to the clean milk movement, but feels sure that inspection under regular departments of health will supersede the volunteer work of medical milk commissions in course of time.

All the milk for all the people must be standardized as healthy food.

The use of score cards is the third step toward clean milk. The author advocates the use of a modified score card (North card) emphasizing as essentials for clean milk, milking, cooling and sterilizing of utensils, giving 90 per cent. of the score to these three points. He advocates dairy inspection in addition to pasteurization, the latter to be preferably in the container in which the milk is delivered, and supervised by the department of health.

Grades of healthy milk should be only (1) raw milk from tuberculin tested cows (certified, guaranteed or Grade A raw); (2) Grade A pasteurized. Milk so poor that Grade B is necessary will rapidly diminish under modern milk inspection.

The book is modern and timely and encourages municipalities to put $200 to $500 into equipment in milk laboratories to enable them to control farm conditions. Palo Alto, California, for its universal tuberculin test and active milk inspection, and Riverside, California, for its co-operative pasteurization and distribution of milk from a plant owned by the dairymen, come in for favorable comment. The book is suggestive and helpful throughout and a real contribution in the solution of the milk problem. A. B.

State Society

IMPORTANT NOTICE—INDEMNITY DEFENSE FUND.

Notes are now becoming due.
Do not let your membership lapse.
Each member will be informed ten days in advance of the due date of his note.

Medical Defense Rules, Section 3: "Dues must be paid to the Secretary of the County Medical Society to which each member belongs prior to the end of February of each year. Any member whose dues are not paid prior to March 1st and whose name is not reported as having paid his dues by the Secretary of his County Medical Society is dropped from the list of members in good standing as of January 1st of such year, and such member is deprived of Medical Defense afforded by the State Society for the period from January 1st of such year to the date when his assessment is received by the State Society. Members whose assessments are not received on or before February 15th of each year will be notified by letter from the Secretary of the State Society of such fact."

STATE DUES FOR 1918.

In order to defray the increased expenses of the Society due to its wider activities, and in response to the recommendations of the Council, the House of Delegates fixed the assessment for 1918 at $7.00, being an increase of $1.00 over the dues of last year.

At the last meeting of the Council of the Medical Society of the State of California, held August 25th, the question of members in service being exempted from paying dues, was raised. Several communications from the component societies were read and discussed dealing with the question—it is a question—whether or not members out of the State on military duty should have their dues paid by the County Society, or by some other method. This matter is now under advisement.

CRIPPLED CHILDREN.

"A general survey of the crippled children of the State of California is in contemplation. Will you kindly assist by answering the following questions, and sending your answers to Dr. Saxton Pope, secretary of the State Medical Society, Butler Bldg., San Francisco:

"How many cases of crippled children are at present under your observation? State ages.

"What are the forms of disability?

"What are the nationalities?

This is a humanitarian project and merits your giving it a few minutes of your time. A number of these cripples if given a proper education would be able to earn their own living and thus avoid becoming charges on the community."

The above request has been sent to the secretary of each county society by Dr. J. Henry Barbat, president of the State Society, with the intention of having it brought to the attention of each member individually.

In a recent letter from Camp Lewis, Base Hospital, Washington, one of our California surgeons writes as follows:

"The examining physicians of the exemption boards are passing the worst lot of cripples ever seen. It looks, here, as if they have combed the

country for the bad ones, and California is the worst offender among them.

"There is no excuse for them and it causes us to reject ten per cent. of the conscripts sent. This percentage is rising steadily. Some of the men were not even stripped during the examination or such mistakes could not be made. One man took off a false foot when told to remove his clothes, here. Another had such a scar in the palm of his hand that he could not open it far enough to grasp a twenty-dollar gold piece offered him as a present.

"The surgeon in charge of these examinations here tells me that he is ashamed of our State. The enlistment of these defectives who, later, are thrown out in the cantonments, is an enormous Governmental expense. He figured that the lowest possible estimation, that of the 30,000 conscripts, such percentage will have to be returned that it will cost the Government $150,000. These rejections would not include such things as hernia, varicocele, and minor defects which we can repair, but those which can not be remedied, and which should have been discovered prior to enlistment. All this is a discredit to our examining boards and a shame to the State.

"Being in the Army, I do not wish to be quoted.

"Major.....M. R. C."

October 7, 1917.

MINIMUM WAGE LAW OUTLINED.

To Whom It May Concern:

Take Notice: That pursuant to and by virtue of the authority vested in it by the Statutes of California, 1913, Chapter 324, and amendments thereto, and after public hearing duly had in the City and County of San Francisco, on Friday, June 15, 1917, the Industrial Welfare Commission of the State of California does hereby order that:

1. No person, firm or corporation shall employ, or suffer or permit an experienced woman to be empoyed in the mercantile industry in California at a rate of wages less than $10.00 per week ($43.33 per month.

2. The wages of learners may be less than the minimum rate prescribed for experienced workers provided:

(a) That learners entering employment under 18 years of age be paid an initial weekly wage of not less than $6.00 per week ($26.00 per month) for the first six months of employment; for the second six months not less than $6.50 per week ($28.17 per month); for the third six months not less than $7.00 per week ($30.33 per month), and for the fourth six months not less than $7.50 per week ($32.50 per month), and for the fifth six months, or when 18 years of age not less than $8.00 per week ($34.67 per month).

(b) That learners entering employment 18 years of age and under 20 years of age be paid an initial weekly wage of not less than $8.00 per week ($34.67 per month) for the first six months of employment; not less than $8.50 per week ($36.83 per month) for the second six months; not less than $9.00 per week ($39.00 per month) for the third six months; not less than $9.50 per week ($41.17 per month) for the fourth six months, and thereafter shall be deemed experienced workers and shall be paid not less than the minimum rate for experienced workers.

(c) That learners entering employment 20 years of age or over be paid an initial weekly wage of not less than $8.00 per week ($34.67 per month) for the first six months of employment; for the second six months not less than $8.50 per week ($36.83 per month); for the third six months not less than $9.00 per week ($39.00 per month), and thereafter shall be deemed experienced workers and shall be paid not less than the minimum rate for experienced workers.

3. The total number of adult and minor learners in any establishment shall not exceed 25 per cent. of the total number of women and minors employed. In computing the total number of women and minors, "temporary" and "special" workers shall not be included.

4. Where payment of wages is made upon a commission or bonus system, wages shall be computed weekly and the same wage, plus the bonus or commission, shall be not less than the minimum rate for the wage group in which the worker belongs.

5. All adult "special" women employees shall be paid not less than $1.67 per day. All minor "special" employees shall be paid not less than $1.25 per day.

6. All "part-time" workers, except waitresses,* shall be paid not less than the minimum rate for an eight-hour day.

(a) Students attending accredited vocational, continuation or cooperative schools may be employed at part-time work on Special Permits from the Commission, and at special rates to be determined by the Commission.

7. No person, firm or corporation shall employ or suffer or permit a woman or minor to work in the mercantile industry more than eight hours in any one day or more than forty-eight hours in any week.

8. All women and minors now employed in the mercantile industry must be rated and paid in accordance with their experience and age as in the above-mentioned regulations.

9. A license may be issued by the Commission to a woman physically disabled by age or otherwise authorizing the employment of such licensee for a wage less than the legal minimum wage; and the Commission shall fix a special minimum for such a woman.

10. The Commission shall exercise exclusive jurisdiction over all questions arising as to the administration and interpretation of these orders.

A "temporary" worker is a person employed during the holidays for a period not to exceed four (4) weeks.

A "special" worker is one who works less than six (6) days a week.

A "part-time" worker is one who works less than eight (8) hours per day.

A "learner" is a woman or minor who (1) is employed in learning the mercantile industry by an employer who provides the learner with reasonable facilities for such learning; and (2) has received a certificate or has been registered as a learner by the Commission.

Provided that an employer may employ a learner for a period not to exceed one week pending application to the Commission for a certificate and registration of such learner.

This order shall become effective sixty (60) days from the date hereof.

Dated at San Francisco, July 6, 1917. Attest: Katherine Philips Edson, Executive Officer.

Industrial Welfare Commission, State of California. Frank J. Murasky, Chairman, Katherine Philips Edson, A. B. C. Dohrmann, Walter G. Mathewson, Alexander Goldstein.

"Every employer or other person who, either individually or as an officer, agent or employee of a corporation, or other persons, violates or refuses or neglects to comply with the provisions of this act, or any orders or rulings of this Com-

* Special minimum rates for "part-time" work waitresses will be determined when the orders are made in the hotel and restaurant industry.

mission, shall be guilty of a misdemeanor, and upon conviction thereof be punished by a fine of not less than fifty dollars, or by imprisonment for not less than thirty days or by both such fine and imprisonment."

"For the purpose of this act, a minor is defined to be a person of either sex under the age of eighteen years."

Note.—Any firm wishing to employ either minor or adult learners must send to the Industrial Welfare Commission, where they will receive blank applications.

County Societies

ALAMEDA COUNTY.

Dr. Ernest H. Pape, of 1720 Oxford street, son of George C. Pape, who enlisted some time ago in the Medical Reserve Corps, has received his commission as first lieutenant in the medical service of the United States Army. Dr. Pape has offices in the First National Bank Building and is the county physician of Berkeley, Albany and Piedmont. He is awaiting orders to take up his work.

At the meeting of the Alameda County Medical Association, which was held October 1, 1917, at the Hotel Oakland, Oakland, the program was as follows:

1. Injuries to the Peripheral Nerves. Dr. Leo Eloesser, San Francisco.
2. Bismuth-Iodoform Treatment of Recent Wounds. Dr. M. L. Emerson.
3. Hydropathy. Dr. M. S. Kimbul.

AMADOR COUNTY.

Dr. Geo. H. Sciaroni, of Sutter Creek, has been summoned to report for military duty, and expects to be located near San Diego for the present. Dr. Sciaroni graduated from a medical college in Little Rock, Arkansas, about two years ago, since which time he has been practising in Sutter Creek.

KERN COUNTY.

A general call was made by Drs. H. H. Sherk and Stanley P. Black, Health Officers of Pasadena, through the Kern County Medical Society, to the medical profession of Kern County, to give them first-hand information relative to Medical Preparedness, Medical Officers' Reserve Corps, etc., this being one of their week-end trips to appear before meetings of the medical profession in the southern part of the state.

Drs. Sherk and Black arrived by machine from Pasadena at 8 p. m. September 14th, and after a hurried lunch were taken to the office of City Health Officer Dr. J. P. Cuneo, where they met some thirty members of the medical profession of Kern County. One, Dr. Wm. B. Smith of Kernville, had traveled 65 miles to attend the call, returning again that night. Also Dr. Katherine Ellis was patriotic enough to attend.

In the absence of Dr. F. J. Gundry, president of the society, now in the east doing post-graduate work, and Dr. J. A. Copeland, vice-president, of McFarland, whose professional duties detained him, the secretary opened the meeting at 8:30, introducing Dr. H. H. Sherk, who gave a clear outline of what had been done and what was expected to be done to assist the United States. He also requested that this society use every effort to see that the U. S. Senators were enlightened on the necessity of supporting the Owen amendment to the Senate Bill No. 1786, increasing the rank of the Medical Officers to a corresponding rank with Medical Officers in the Allied armies.

It was moved, seconded and carried unanimously that the secretary communicate with U. S. Senators, calling their attention to this amendment, and also urge the State Society officials to take up this matter at once with the civic and official bodies of Kern County to the same end.

A committee consisting of Dr. S. T. Smith, past president; Dr. Geo. Buchner, past president and member of Board of Censors, and Dr. G. C. Sabichi, were appointed to take up the matter.

Dr. Black was then introduced and impressed the meeting with the necessity of informing the Government at the earliest possible moment that they were ready to go, unless physically disqualified for service.

Dr. Gayle Moseley was then introduced, he being a member of the District Exemption Board now in session. He threw some lights and shadows on being a member of a District Exemption Board, and requested the profession to be very careful and very definite in certificates given to recruits asking for exemption.

Dr. W. H. Cook, late major, spoke very interestingly on the actual experience of one with twelve years' service, both as a line and medical officer, and expressed keen regret that he was not now in active service.

It was noted that Kern County had already supplied to the service as captain, Dr. C. W. Kellogg, as lieutenants, Drs. Marshall, McLain, Blood and Bumgarner.

A vote of thanks was extended to Drs. Sherk and Black, who returned to Pasadena that night; also to Dr. Moseley for his interesting and helpful talk. The meeting adjourned, voting that it was a very successful meeting.

C. A. MORRIS, Secretary.

LOS ANGELES COUNTY.

In response to urgent cable requests from the American Red Cross commission to France, a third detachment of child-welfare doctors and nurses will be sent to France. Included in the party is Dr. Helen H. Woodroffe, of Ocean Park, Cal.

Dr. H. Bert. Ellis a Trustee of the A. M. A.

At the last meeting of the American Medical Association, Dr. H. Bert. Ellis of Los Angeles was honored by being elected a member of the Board of Trustees of the A. M. A.

This Board has in its keeping the enormous professional and financial interests of the A. M. A. and a trusteeship is one of the very highest honors in the gift of the Association.

This election is a distinct recognition of the many years of faithful work by Dr. Ellis in behalf of organized medicine.

MENDOCINO COUNTY.

Sept. 18, 1917.

My Dear Doctor:

How is it that none of you take the trouble to write and keep your secretary posted on happenings—medical—in your locality? How am I to know if no one keeps me posted? Besides, the editor of the State Journal, in his comments, tells you to go after your county editor. Please do, then we will get some interest in the game. If nothing else will stir you, the anticipation of seeing your secretary editor getting it "in the neck" ought to bring both letters and attendance.

Fraternally yours,
OSWALD H. BECKMAN,
Secretary and County Associate Editor for the Mendocino County Medical Society.

Dear Doctor:

If my letters some scolding do
They were meant to benefit you.
If I from you some news expect
And write to you to that effect,
You should at once help do your part.
Send me the news, do make a start.
And if the news from you be none,
Please write a note to me for fun.

Fraternally,
Your Sec., Editor, O. H. B.

MONTEREY COUNTY.

Dr. W. R. Reeves, a member of this society, has enlisted in the M. R. C.

NEVADA COUNTY.

Dr. Paul Barnes, who has been practicing as a physician and surgeon in Grass Valley for several years, yesterday closed his offices and is closing up his business affairs so as to be ready to join the Medical Reserve Corps, in which he recently enlisted.

PLUMAS COUNTY.

Dr. Frank M. Whiting of Quincy has received his commission as First Lieutenant in the Medical Section of the Officers' Reserve Corps.

SAN BERNARDINO COUNTY.

The first meeting after the summer of the San Bernardino County Medical Society was held at San Bernardino, Tuesday evening, October 2, 1917. After the banquet the annual election of officers took place, which resulted in the following being elected for the coming year:

President, G. G. Moseley, Redlands; first vice-president, N. H. Stiles, San Bernardino; second vice-president, J. A. Champion, Colton; secretary and treasurer, C. L. Curtiss, Redlands; delegates to the meeting of the State Society, D. C. Strong, San Bernardino; G. G. Moseley, Redlands. Alternates, W. W. Savage, San Bernardino; C. L. Curtiss, Redlands.

The new County Hospital is just completed and the evening was given over to a discussion of the County Society furnishing an attending and consulting staff to the hospital. The report of the Hospital Committee on the subject recommending that the County Society undertake this work was adopted.

SAN DIEGO COUNTY.

San Diego is doing her bit. Over thirty of the local profession have either gone into service or are awaiting assignment.

Dr. A. E. Banks recently resigned his position as City Health Officer to accept a captain's commission in the Army. Dr. W. W. Crawford has been appointed to succeed Dr. Banks in the Health Office.

The County Supervisors have the plans drawn and the money available to proceed at once with the erection of an administration building and two wings to accommodate about sixty tuberculous patients. Plans are so arranged that the buildings may be added to as the needs demand.

The first regular meeting of the County Medical Society in September took the form of a clinical evening in charge of the surgical staff at the County Hospital, where interesting cases were presented and discussed by Drs. Newman, Burger, Courtenay, O'Neill and Fox.

The second meeting in September featured an illustrated lecture on "Radium in Gynecology," by Dr. Rex Duncan of Los Angeles.

On October 9th, in the society rooms, Dr. H. B. Wilson discussed the question of "Scurvy in Infancy," including an interesting case report.

The local society has a committee working hard upon the problem of conserving the practices and aiding the families of the doctors who go into service.

The San Diego Diagnostic Group Clinic broke all previous records for cases discussed during the month of September. The long waiting list of applicants precludes any possibility of a shortage of clinical material in the near future.

Drs. H. P. Newman, T. O. Burger and F. A. Burton went East in October to attend the Clinical Congress of Surgeons of North America.

SAN FRANCISCO COUNTY.

Proceedings.

During the month of September, 1917, the following meetings were held:

Tuesday, September 4—Section on Medicine.

1. Remarks on spontaneous pneumothorax; demonstration of a case. Philip H. Pierson.

2. The Wassermann reaction compared with other clinical procedures. E. V. Knapp.

Tuesday, September 11—General Meeting.

1. Insanity from the public institution's standpoint. Robert L. Richards, State Hospital, Mendocino County.

2. Insanity from the general practitioner's standpoint. Philip King Brown.

Tuesday, September 18—Section on Surgery. St. Luke's Hospital Clinical Evening.

1. Two cases of Volkman ischemic contracture of muscles of the forearm: one cured and one in process of treatment. L. Eloesser.

2. The medical routine of a general military hospital and its diagnostic value. J. Wilson Shields.

3. Essential points in hospital administration. W. R. Dorr.

4. A simple method for localizing foreign bodies in the eye. Kaspar Pischel.

5. A new method of treating procidentia. F. B. Carpenter.

Tuesday, September 25—Section on Eye, Ear, Nose and Throat.

1. The etiology and symptomatology of chronic suppurative otitis. Adolph Baer.

2. The pathological condition of the mastoid in chronic suppurative otitis: with X-ray plates. H. B. Graham.

3. Indications for the radical mastoid operation. Cullen F. Welty.

Dr. Howard C. Naffziger has enlisted in the Medical Corps of the United States Army and has been ordered to special brain surgery work. Dr. Naffziger is to report at Greenville, South Carolina, on October 1st, from where he will go with the troops from the United States to France.

Dr. Louis D. Roncovieri, son of Superintendent of Schools Alfred Roncovieri, has received notice from the Government that he would be commissioned a first lieutenant in the Medical Corps. Dr. Roncovieri will go to France with the San Francisco Base Hospital unit.

The San Francisco Hospital Red Cross Army Base Hospital No. 47 needs nurses. The professional staff of 24 doctors, the civilian staff of 6, the administrative staff of 153, and the chaplain have all been enrolled. It is necessary that the nursing personnel of 65 be completed before the unit can be certified to the surgeon-general as ready for active service. Nurses should write at once to Miss Elizabeth Jamieson, Chief Nurse, Base Hospital No. 47, Cottage Hospital, Santa Barbara; state age, place of graduation, whether registered, and whether steps have been taken to enroll or whether applicant is already a member of the American Red Cross.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the Chamber of Commerce quarters on Friday evening, September 28th, President C. R. Harry in the chair. Those present were: Drs. C. R. Harry, J. V. Craviotto, F. P. Clark, W. W. Fitzgerald, R. B. Knight, B. J. Powell, C. D. Holliger, C. F. English, H. E. Sanderson, J. D. Dameron, L. Dozier, B. F. Walker, Margaret Smyth, J. T. Davison, F. Conzelmann and D. R. Powell with Drs. McClish and Mason of Stockton, and Dr. Richard Harvey of San Francisco as guests.

At the conclusion of the committee reports, the chairman introduced Dr. Richard Harvey of the University of California staff who gave a very able paper on the "Treatment of Syphilis of the Nervous System." He particularly emphasized the necessity of careful laboratory routine not only of the blood but of the spinal fluid. However he recognized the necessity of being governed by the clinical symptoms as well as the laboratory data. The discussion was joined in freely by the members from the state hospital and Drs. Fitzgerald and Dozier of the staff of Clark's Sanatorium. Dr. Harvey answered numerous questions and closed the discussion, whereupon the meeting adjourned.

DEWEY R. POWELL, Secretary.

SANTA BARBARA COUNTY.

Dr. C. C. Park, well known in Santa Barbara, and head of the Associated Charities, has departed for France, where it is his intention to found a hospital for convalescents from the battlefields of Europe. Within a few days his wife and daughter, who are still in Santa Barbara, will follow him to France.

Two sons of Dr. Park are now in the American Army, one of them being in training at Tanforan, and the other being at Camp Lewis.

Dr. Philip S. Chancellor, having received a major's commission, left Santa Barbara on the evening of the 13th for Camp Kearney, Linda Vista, California, near San Diego, where he will be in charge of the medical side of the hospital at that camp. Major Chancellor leaves a host of warm and well-wishing friends, both in and out of the medical fraternity in Santa Barbara, and his success at Camp Kearney is a foregone conclusion.

Dr. Harold Sidebotham has received a commission as captain and expects to leave for the front with the San Francisco Hospital Unit No. 47.

Dr. William H. Campbell, who is in charge of the examining of recruits for Santa Barbara County, reports that to obtain the quota for Santa Barbara County, which is something over 400, over 2000 recruits will have to be examined, something like 1600 having already been passed upon.

Work is already started for the new County Hospital, four and one-half miles north of Santa Barbara on the State Highway. The building will cost $45,000. It will be as strictly modern as the county knows how to make it. The architectural plans will undoubtedly make it a place of beauty, and it is so arranged that new units can be added without detracting from its attractiveness as a structure.

SOLANO COUNTY.

Dr. E. A. Peterson left Vallejo on September 20th for Camp Lewis, American Lake. The doctor was commissioned a lieutenant in the Medical Reserve Corps, and is the first of the Solano County physicians to answer the call to the colors. Several have volunteered and are waiting orders.

SONOMA COUNTY.

The Sonoma County Medical Society has furnished six doctors for the army. Drs. Temple and Herrick of Santa Rosa and Dr. Wilson of Sebastopol are on active duty, while Drs. O'Brien and Peoples of Petaluma and Dr. Butler of Eldridge are awaiting orders.

The president, Dr. Marion B. McAuley of Petaluma, offered her services, but as yet the Army has no place for women. It does seem that women could do most efficient work in the hospitals.

At the September meeting Dr. W. F. Cheney of San Francisco addressed the society on Diagnosis of Chronic Appendicitis. The October meeting will consist of a Symposium on Heart Diseases, with a clinic.

Dr. Elizabeth M. Yates was elected county associate editor.

VENTURA COUNTY.

At the monthly meeting of the Ventura County Medical Society held at Ventura, October 3rd, the enclosed resolutions were adopted.

Resolutions adopted by the Ventura County Medical Society for the protection and retention of the practices of those physicians who have volunteered their services at the battle fronts.

Whereas, Several physicians, members of the Ventura County Medical Society and of high standing and attainments in their profession, have answered the urgent call of patriotism by volunteering their skill and labor as military surgeons to serve suffering humanity upon the battlefields of France and elsewhere; and

Whereas, Such service will inevitably subject them to sacrifices, hardship and bodily dangers, and also entail great financial loss through interruption of well established medical practices at home; therefore, be it

Resolved, That this Society desires to impress these physicians with its deep appreciation of their patriotism, their unselfishness and devotion to suffering humanity. That because of the heavy obligations we shall owe them we herewith pledge to them during their absence every protection and service to their families, both in health and in sickness, that we may be able to extend.

Resolved, That in every honorable way we will endeavor to maintain and continue during their absence the present relation of confidence existing between them and their patients and will on their return, by publication in some newspaper generally read in the territory of their practice, announce their return and ask that their former patients again employ them as previous to the military interruption of their practice;

Resolved, That upon their resumption of their respective practices we will return to them all appointments held by them at the time of their enrollment in the country's service, and be it further

Resolved, That a copy of these resolutions be sent to each of the local papers and the State Journal for publication.

C. A. JENSON, Secretary.

Since the last report Lieut. Lewis has been transferred from Fort Riley to Fort Lewis. Lieut. Merrill is doing X-ray work in Los Angeles. Lieut. Gardner is at Fort Mason. Drs. Avery and Homer have received their commissions and are awaiting orders.

Dr. R. W. Avery has received commission as first lieutenant in the Reserve Officers' Medical Corps. He is the first Oxnard man to receive a commission. Dr. Avery has almost closed the details of his practice here so as to be ready to answer the call to service with the least possible delay.

Military News

The Army Medical Department has been charged by the Secretary of War with the duty of supplying gas masks and other appliances to protect United States troops against asphyxiating and poisonous gases used in warfare, and to that end is organizing a Gas Defense Service, including the necessary overseas repair sections for work abroad.

NAMED TO WOMAN'S COMMITTEE.

The woman's committee of the Council of National Defense announces that Miss Hannah Patterson of Pennsylvania has been appointed by the council as a member of the woman's committee. Miss Patterson will remain permanently at headquarters, 1814 N Street NW., Washington, D. C., with the title of resident director. She will give counsel and assistance whenever it is desired by the various state divisions of the committee.

MEDICAL OFFICERS TRANSFERRED.

The following-named officers of the Medical Reserve Corps are relieved from duty at the places specified and will proceed to the camps mentioned opposite their names, and report in person to the commanding general thereof and to the commanding officer of the base hospital for duty in the cantonment laboratory:

Capt. Robert L. Tebbitt, Fort D. A. Russell, Wyo.; Camp Kearny, Linda Vista, Cal.

First Lieut. John M. Rehfisch, San Francisco, Cal.; Camp Kearny, Linda Vista, Cal.

WOMEN PHYSICIANS PREPARE FOR SERVICE.

San Francisco women physicians, who make up the majority of the membership of the California Organization of Women Physicians for Federal Recognition, are beginning to prepare themselves for service abroad. French classes are held from 10:30 to 11:30 A. M. The beginners' class meets in Dr. Millicent Cosgrave's office, 350 Post street, with Miss Quayle in charge. The advanced class meets in Dr. Adelaide Brown's office, with Mrs. Louise N. Howard in charge. Classes are held once a week.

BOARD NAMED TO COLLECT DATA FOR MEDICAL HISTORY OF WAR.

The Surgeon General of the Army has established a board to collect material for the medical and surgical history of American participation in the European War. This board is composed of Col. C. C. McCullock, librarian of the Army Medical Library; Maj. F. H. Garrison, assistant librarian in direct charge of work on the history; and Capt. John S. Fulton, secretary of the Maryland State Board of Health, who will have charge of the statistical work. Some European countries are known to be well along on medical histories of the war. The medical history of the Civil War in the United States is made up of six volumes, whose preparation covered a period of 28 years from the end of the war. It is planned to have the work done relatively soon after the end of the war, although the immense mass of reports to be gone through and analyzed, and the material from them assembled, will probably require many months' work.

SIZE OF ARMY MEDICAL SERVICE.

The Medical Department of the Army now has an enlisted personnel of over 69,000 men, compared with 6,600 just before the outbreak of the war. Nearly 13,000 officers had accepted commissions in the Medical Reserve Corps up to October 1; the Dental Reserve Corps now has over 2,600 commissioned officers and the Sanitary Corps about 240.

In organizing for war work the Surgeon General's office has added sections on internal medicine; medical officers' training camps; medical military instruction; psychology; neurology and psychiatry; surgery; infectious diseases and laboratories; head, eye, ear, mouth and brain; military orthopedics; special hospitals and physical reconstruction; gas defense; food; office development and filing system.

The Surgeon General's office now has over 500 clerks and messengers and more than 100 officers, compared with 140 clerks and messengers and 10 officers which made up its personnel in March, 1917. On October 1 the Regular Nurse Corps numbered over 300 members, with about 1,600 members in the Reserve Nurse Corps, as compared with 230 in the regular corps and 227 in the reserve corps in March, 1917.

RED CROSS NURSES IN SERVICE NOW NUMBER ABOVE 2,000.

More than 2,000 Red Cross nurses are now engaged in active nursing service and another 2,000 in teaching and committee work, the national committee on nursing of the American Red Cross announces. Nine thousand more stand ready to serve at once, and the number of trained nurses volunteering for service with the Red Cross now averages a thousand a month.

Miss Jane A. Delano, chairman of the nursing committee, states that the general scheme of unit organization was to keep together groups of nurses and doctors with experience in the same training schools and hospitals. Base hospital units for the Army and the Navy have been recruited from alumnae of the schools connected with the largest hospitals in the country in groups of 20, 40, 65 and 100. Besides the base hospital units the Red Cross has established units of nurses for emergency use. Such a hospital unit consists of one doctor and twenty-five nurses. Specially trained nurses are being held in readiness for work in units devoted to pediatrics, orthopedics, mental diseases, and public health.

Infant welfare nurses have already been sent to France and to Roumania. Plans are also under way for a special unit of nurses trained in the care of mental diseases to serve in the mental wards of the hospitals established at the thirty-two Army cantonments. Units in orthopedics are being prepared to meet the needs of the maimed in the reconstruction hospitals.

In the civil zones surrounding the training camps and cantonments and the naval base, fifty public health nurses have been assigned to work under the Red Cross sanitary directors. Ninety-five Red Cross nurses in the town and country nursing service are engaged in teaching and nursing in rural and mining districts that the public health at home shall not suffer needlessly.

INFORMATION ON REHABILITATION OF INJURED.

The Surgeon-General's office has addressed a letter to the secretaries of all county medical societies relative to the rehabilitation of partially handicapped persons who have been successful following injury. Arrangements are being made for special treatment for the wounded, including special efforts for functional restoration of damaged parts and vocational re-education for those who, from the nature of their illness or injury, are unable to follow their previous occupation.

To aid in this work the Surgeon-General desires to know what those are now doing who are suffering from chronic illnesses or who are partially disabled as a result of injuries. For exam-

ple, a person who has lost the right hand may still be a successful carpenter or market gardener; one having lost both lower extremities may be successful in some line in which he is not required to move from place to place; a man with chronic heart disease may be suitably occupied in work in which there is no special stress on that organ. The collection of this experience should be of assistance as showing what the various types can do.

The Surgeon-General requests that medical societies and physicians aid in this work by securing a list of partially disabled persons in the county who are successfully following trades or occupations. The information desired in reference to each case should include: (a) character of disability, medical or surgical; (b) the work at which the patient is employed, and degree of success; (c) the way in which he learned or entered his occupation after his injury or illness. The names of the disabled are not necessary.

If any man who has been successful after an injury or illness desires to write a short autobiography stating his experience, this will be very useful and will be utilized in preparing a booklet to be distributed to the men at the proper time.

Notice

ASSISTANT SURGEONS IN PUBLIC HEALTH SERVICE.

Examinations for positions as Assistant Surgeons in the U. S. Public Health Service will be held at the U. S. Marine Hospital, San Francisco, every few months. After four years' service, Assistant Surgeons are entitled to examination for promotion to the grade of Passed Assistant Surgeon. Passed Assistant Surgeons after twelve years' service are entitled to examination for promotion to the grade of Surgeon. Assistant Surgeons receive $2000, Passed Assistant Surgeons $2400, Surgeons $3000, Senior Surgeons $3500, and Assistant Surgeon-Generals $4000 a year. When quarters are not provided, commutation at the rate of $30, $40 and $50 a month, according to the grade, is allowed. All grades receive longevity pay, 10 per cent. in addition to the regular salary for every five years up to 40 per cent. after twenty years' service. Candidates must be between 23 and 32 years of age, graduates of a reputable medical college and have had one year's hospital experience or two years in general practice. The examinations will be physical, academic, professional and clinical.

Invitation to appear before the examining board may be obtained by applying to the Surgeon-General, U. S. Public Health Service, Washington, D. C., enclosing two testimonials as to professional and moral character, one of which must be signed by a physician. Further information may be obtained from the Medical Officer in Charge, U. S. Marine Hospital, Thirteenth avenue and Lake streets, San Francisco, Calif.

Correspondence

To the Editor:—I am reporting to you the following case which may be of interest: Last night an Indian about sixty years of age, called desiring relief as he had not made water for twenty-four hours and had just walked into town from a ranch three miles in the country. He stated he thought he would die on the road as he was in so much misery. His abdomen was enormously distended. I catheterized him with a small soft rubber catheter and withdrew 2000 c. c. of perfectly clear urine. He stated he had been drinking watermelon seed tea all day in the hope of starting the flow but without effect. Its diuretic properties, however, only added to his misery. The immensely large quantity of urine in the bladder was interesting.

Yours very truly,

W. C. SHIPLEY.

October 15, 1917.

From the Doctor in Charge, Military Hospital, Endell Street, W. C. 2, London, England.

To Dr. L. B. Deal, M. D., 69 Fair Oaks Street, San Francisco.

Sep. 11th, 1917.

Dear Madam:

In reply to your letter to Dr. Garrett Anderson I have pleasure in giving you the following facts about the employment of women doctors by the War Office:

The medical staff of this hospital is appointed by the War Office, and has entire charge and control of the hospital. The staff is graded and paid according to rank, namely, as Major, Captain or Lieutenant. None of us are commissioned, as a commission cannot be held by women under the present Army Act of Great Britain, and as women cannot be attested or sworn in under that Act.

We are given the position of officers with the pay and allowances of R. A. M. C. officers. In other military hospitals many women are employed. Some of these are graded and paid according to rank as we are here. Others are engaged as civilian practitioners at a flat rate of 24/- a day without uniform or other allowances. It should be noted that there are men doctors in military hospitals engaged on these terms also. Men so engaged are ineligible for general military service, and the War Office has a habit of regarding women as also ineligible for general service.

Our staff here has certain privileges. It is permanent and cannot be moved about by the War Office, and each member except Dr. Garrett Anderson and myself has an opportunity of terminating her appointment every six months.

Yours faithfully,

(Signed) FLORA MURRAY, M. D.,

Doctor in Charge, Military Hospital, Endell St., W. C. 2, London.

To the Editor:

In answer to your request of October 1st for personal impressions of our new experiences as medical officers, I might mention one phase of the work that has struck me as particularly important, and one that has unusual opportunities for close and continual observation. I feel that we are all striving to have our fighting men efficient and in our efforts to get physically fit men we may overlook the fact that they can be mentally unfit for service. In this war, as never before, the intelligence of the individual soldier, or sailor, counts, and it is up to the medical department to recognize the mentally dull—those who would be utterly useless in an emergency. I don't mean to recognize a defective that any one could point out, but to be able to determine with some degree of definiteness the mentality of a recruit.

In the short time I have been stationed at the U. S. Naval Reserve Training Station, San Pedro, California, I have come in contact with several cases that required a special examination with regard to their mental fitness. The first one was a man of 20 years who was always getting into trouble and not doing his duty. Word was passed that he was a little "off," or that he was a "nut." On going over him, using the Stanford revision of the Binet Tests for the measurement of intelligence, I found that he had a fair average adult intelligence. I made a report of the examination with the suggestion that he be given work that he liked better; since that time he has been get-

ting along fairly well assisting the carpenter. On inquiring about him and asking if he was still crazy, I received the response, "Crazy? Sure, crazy like a fox!"

I have gone over other cases that have shown a low mental status. One was a 24-year-old with a mental age of 11 years 6 months. He was enrolled as a hospital apprentice and then had to be transferred to seaman second class, where he got along no better; he was careless in his work and untidy about his person; again he was transferred, this time to the galley. Here he wipes the silver (?), fills the salt shakers, and washes the dish rags; in these duties he shows himself willing and proficient. Another one was 19 years old having a mental age of 12 years and 4 months. He is a walking example of "In-Bad-the-Sailor"; he does better work than the 11-year-old but is careless and untidy. His niche hasn't yet been discovered.

Another case is that of a man of 21 with a mental age of 9 years. He is a borderline case between an imbecile and a moron. He has given a great deal of trouble and will continue to be a burden; he is typical of the type that shows a lack of will to do right more than the will to do wrong. He is always in trouble; he no sooner gets out of a fix than he is in again; he is the butt of his shipmates, being continually teased and tormented. His mentality is so low and of such a nature that he will be recommended to an institution.

One can readily see the effect on the morale and discipline where such men are present. Besides this there is the great danger that might result from giving these men orders of responsibility—danger in the hospital corps, danger in handling a loaded gun, danger in trusting them to do sentry duty; then, too, there is the playful abuse that might be inflicted on the unfortunate himself.

Among the many duties with which a medical officer must acquaint himself that of the mental examination of recruits should receive more specialized attention, for I believe that mental incompetency explains the action of the unsatisfactory recruit in many cases.

R. H. HUNT,
Asst. Surgeon U. S. N. R. F.
U. S. Naval Reserve Training Station, San Pedro, Calif., October 8, 1917.

(Note.—Above report approved by Commandant.)

AN OPEN LETTER REPLY.

To the Editor:

The "open letter" contributed by Dr. J. R. Jones to the September Journal starts out with the interrogation, "You ask me why I do not try Christian Science on my paralysis?" Then follows the answer, in part, "I have absolute lack of faith in it."

Naturally the question arises, Does a mental state of absence of faith bear any relation to a bodily condition of dearth of action? If it is true, as is now generally conceded, that the mind, at least in no small degree, controls the body and expresses itself therein, then a static state of thought represented by want of faith may find expression in sluggish or paralyzed bodily members and functions.

Huxley refers to matter as a name for certain forms of consciousness, rather than the hard, indestructible stuff it purports to be; and metaphysicians remind us that the human body is simply a subjective state of the human mind, and hence is active or inactive, normal or abnormal, according to the activity or normality of the mind. Is it not apparent that there may be a very close connection between a mind that will not believe and a body that will not move?

The afflicted man says, in effect, that if he rejects the testimony of the physical senses, "only emotion is left." He overlooks the faculty of reason, to which most people lay some claim. What part do the senses play in logic, and which one of them declares even so simple a mathematical proposition as that the product of the sum and difference of two quantities equals the difference of their squares?

He says again that if his brain and senses lie, "God is lying." A startling statement, truly, in the face of the indisputable truth that the five senses are false witnesses as to the most elementary facts and are constantly deceiving us except in so far as their testimony is corrected or reversed by education and science. The eye sees the moon resting in the branches of a near-by tree, while science locates it a quarter of million miles distant in the heavens. Such illustrations can be multiplied ad infinitum.

Down in Jersey there is said to be a philosopher who has so much regard for his senses and so little for science that every evening at sundown he sets a bucket full of water on his front gate post, and in the morning triumphantly exclaims, as he finds the water unspilled and undisturbed, I have proved it again, the world does not go round!

Out in the Dakotas, so it is said, resides a prophet who, from lifelong contemplation of the boundless prairies, has reached the conclusion that the world is not round after all, and he has walked all the way from Fargo to El Paso only to find that the earth is flat all the way—another example of the dependability of sense testimony.

Possibly if our afflicted friend had more faith in health than in disease—faith that since health is good it is God-given and that since disease is bad it has no divine authority—he might find that such faith would enlarge into realization and enable him to see with the poet,

"Dreams of sense disappear
As truth dawns on the sight."

PETER V. ROSS.

(Note.—The above letter was submitted for criticism and reply to a gentleman well qualified to answer it. His reply follows.—Editor.)

To the Editor:

I have read with interest the letter of Dr. J. R. Jones in your September issue setting forth his sufficient reason for not trying Christian Science for paralysis, and I have read, with somewhat different feeling, the reply of Mr. Peter V. Ross, Christian Science Committee on Publication for Northern California.

It should be noted that the committee above named is required to respond to all criticisms of Christian Science that may appear, if necessary at advertising rates, and is responsible for having the papers or journals containing such responses "circulated in large quantities."

Dr. Jones wrote as an individual seeking enlightenment, while Mr. Ross wrote as a committee performing an official duty.

It appears that Dr. Jones finds it difficult to hope to be cured by a system that offers no hope to those who do not believe in it and in which Dr. Jones confesses he cannot believe. In other words, Dr. Jones cannot believe what no sane mind can believe, and despairs of relief from a system that admits its inability to cure the unbeliever.

Let Dr. Jones not be discouraged. If he will strenuously endeavor to relieve himself of the very evident sanity that is his obstacle to belief, and if he succeeds, he will then, in all probability, find it easy to believe the most preposterous absurdities of Christian Science and may then, upon the merest trial of its healing power, satisfy what is left of his mind that his paralysis has been completely cured.

May I take a little of your valuable space briefly

to examine one of the arguments of Christian Science Committee on Publication Ross?

Supporting the Christian Science contention that knowledge derived through the senses is erroneous and that non-sense is the only reliable information, Christian Science Committee on Publication Ross asks what part the senses play in logic, which of them demonstrates the simplest mathematical proposition?

I confess that a wide familiarity with the "logic" of Christian Scientists fails to disclose that sense has any part in it; but let us try to treat the matter seriously.

The mind reasons, and the mind is a conglomerate of states of consciousness. Consciousness is possible only to sentient beings. Were there no sensation, there would be no mind, or it would be an utter blank. A stone is as capable of reasoning, of logical methods of thought, as is the mind of a being that can neither see, hear, feel, taste or smell; and yet Mrs. Eddy herself says, "The five physical senses are the avenues and instruments of error."

What sense would there be in endeavoring to controvert so senseless a proposition? If Dr. Jones is really eager to qualify for belief in Christian Science as a prerequisite to the cure of paralysis, possibly he may facilitate the derationalizing process by engaging in argument with the learned Christian Science Committee on Publication Ross. Only a lunatic can believe the things Christian Scientists pretend to believe, and prolonged argument with a Christian Scientist over Mrs. Eddy's aberrations ought to be a distinct aid to mental disorder.

With delightful, but unconscious, humor the esteemed committee closes his communication with the sublime lines:

"Dreams of sense disappear
As Truth dawns on the sight."

That is to say, dreams of sense disappear as truth dawns on the **sense** of sight.

But, enough. Life is too full of opportunities for useful activity to waste time on self-evident absurdities.

The important question is, do Christian Scientists effect cures? Is there any truth in their oft-repeated assertion that they have healed organic disease in its last stage—consumption, cancer, tumor, heart disease, diabetes, Brights disease and all the rest?

I confidently affirm that there is not a word of truth in the professed cures. No such professed cure has ever been established. No such professed cure has ever been submitted to competent judgment in order to determine its reality. No such professed cure ever will be submitted to competent judgment, because it is well known to those making the professions that competent judgment would establish the falsity of the professions.

Christian Science healers are the most incompetent of incompetents; for they not only have made no attempt to render themselves competent to determine the presence or the absence of disease, but they have positively sought to render themselves as incompetent as they possibly can.

Mrs. Eddy taught that education is the cause of all disease; that the less one knows of physical conditions, the facts of physiology, the laws of health, the more power one has to heal disease. She taught that knowledge of any of the sciences is an obstacle to spiritual discernment; that the less thought given to sanitary subjects the less disease there will be. So that the Christian Science healer, in the endeavor to acquire healing power, actually strives for the most complete ignorance regarding everything that would tend in any degree to qualify him intelligently to discuss physical conditions.

If Christian Science Publication Committee Ross insists that there is available the evidence of persons who will testify to their own cure of organic disease by Christian Science, I will, if he wish, conduct him to the graves of numerous victims of the absurdities and pretensions of this cult, who died of the diseases the alleged cure of which led them into the Christian Science fold.

Has this imposture not gone far enough? Is it not time, in the interest of truth and humanity, for the protection of the weak and credulous, in order that helpless children may be spared needless suffering and unnecessary death through the stupid and cruel withholding of trained medical skill that could in all cases relieve suffering and in countless cases save life—is it not time that Christian Science healers produce proof of their professions, or be suppressed?

A LAYMAN.

With the Medical Colleges

OAKLAND COLLEGE OF MEDICINE AND SURGERY.

Five members of the faculty and six of the alumni of the Oakland College of Medicine and Surgery, have entered the government service in the Medical Corps of the Army. The members of the faculty in the service are Drs. A. M. Meads, R. A. Berry, Jau Don Ball, John P. Byrnes, C. A. Wills. The following members of the alumni have entered Government service: Drs. Paul Dolan, Albert B. Herrick, W. P. Milliken, Clyde Shedd, M. J. Wahrhaftig. In addition to these who are serving in the army. Dr. Edward Lundegaard has entered the Navy Medical Corps, and Dr. Don D. Weaver entered the British Medical Service several months ago.

U. C. COLLEGE OF MEDICINE.

The list of U. C. medical school men who have been called into the service of the Government in the Medical Officers' Reserve Corps has been completed and includes the following:

H. C. Moffitt, professor of medicine, major.

E. J. Best, instructor in medicine, first lieutenant.

F. P. Brendell, intern, U. C. H., first lieutenant.

H. E. Ruggles, assistant clinical professor of roentgenology, captain.

W. P. Lucas, professor of medicine, civilian appointment.

C. L. Trauter, assistant in neurology, first lieutenant.

J. B. Frankenheimer, instructor in medicine, captain.

A. Weeks, instructor in surgery, major.

D. W. Sooy, intern, S. F. H., lieutenant, junior grade, U. S. naval reserve.

College of Physicians and Surgeons, Medical Department of the University of Southern California, Los Angeles.

Dr. Granville MacGowan has been chosen head of the Genito-Urinary Department.

The Trustees found it necessary to make some changes in the heads of departments for the benefit of the school. Arthur Leon Grover, Ph. B,

M. S., M. D., who had been for a number of years connected with the Pathological Department of the State University of Iowa, was elected full-time Professor of Pathology, Bacteriology and Clinical Microscopy. Harry W. Coffin, B. S., M. A., who had been connected with the University of Iowa also, was elected full-time Instructor in this department.

Horace L. White, B. S., M. A., Ph. D., who for a number of years was connected with the Chemistry Department of the University of Vermont, was chosen full-time Professor of Biochemistry. Mr. William R. Cleveland, B. S., of the University of Minnesota, was chosen as full-time Instructor in this department.

There are nine full-time teachers in this medical school, who give all of their time to teaching and research. Many radical changes have been made in the past year, regardless of the fact that rigid entrance requirements—which are two years of prescribed university work in addition to four years of prescribed high school work (same as A. M. A. and New York state requirements)—together with war disturbances, decreased the classes materially.

The library has been added to until it now contains practically all of the leading medical books and periodicals. Library cases have been added and a thorough library system is in vogue.

The college clinic has been moved out of the college building into adjoining buildings rebuilt especially for this clinic, and the space formerly occupied by the clinic has been given over to teaching laboratories and research laboratories. With these changes teaching facilities are practically complete.

Beginning with the session of 1918-19 this school requires one full year of interneship, or its equivalent, of all graduates.

STANFORD UNIVERSITY MEDICAL SCHOOL.

A Red Cross Naval Base Hospital Unit has been established in connection with the Stanford Medical school and the following members of the staff and forty nurses from Lane Hospital (the University Hospital) have been enrolled in the Unit:

Dr. Stanley Stillman, Professor of Surgery (Director of the Unit).

Dr. Albion W. Hewlett, Professor of Medicine.

Dr. George D. Barnett, Instructor in Medicine.

Dr. Edmund Butler, Assistant in Obstetrics and Gynecology.

Dr. John F. Cowan, Assistant Professor of Surgery.

Dr. Harry L. Langnecker, Clinical Instructor in Surgery (Orthopedic).

Dr. Albert B. McKee, Clinical Professor of Surgery (Ophthalmology).

Dr. Walter F. Schaller, Associate Clinical Professor of Medicine (Neurology).

Dr. Roland B. Tupper, Clinical Instructor in Medicine.

Dr. Frederick Wolfsohn, Clinic Dentist.

The following to act as alternates:

Dr. Philip K. Gilman, Assistant Clinical Professor of Surgery.

Dr. Harold P. Hill, Associate Clinical Professor of Medicine.

Dr. Thomas G. Inman, Clinical Instructor in Medicine (Neurology).

Dr. Lester O. Kimberlin, Assistant in Surgery.

Dr. Emmet Rixford, Professor of Surgery.

Miss Elizabeth Hogue, Superintendent of Nurses, Lane Hospital.

There has also been established at the Medical School a Training School for Medical Officers of the United States Navy. One course of six weeks has just been completed and a second group of men have been enrolled for another period of six weeks. Dr. George Rothganger, Assistant Clinical Professor of Surgery at the Medical School, who is now surgeon in the United States Navy, has charge of this work and is assisted by other members of the staff of the Medical School.

A Hospital Corps Training School for the instruction of fifty hospital apprentices has been conducted at the Medical School since July 16, 1917, under the direction of Dr. Stanley Stillman.

The work consists of lectures, recitations and laboratory work in Anatomy and Physiology; First Aid and Minor Surgery; Materia Medica, Pharmacy and Toxicology; Elementary Hygiene and Sanitation; and Bacteriology; also lectures and practical nursing in the medical and surgical wards, operating room of Lane Hospital, and the Outpatient Clinics. Instruction is given by Drs. George D. Barnett, Roland B. Tupper, J. F. Cowan, Miss Jessie Coon and Mr. S. E. Weinberg. Hospital Corps drill is given by Mr. William Meehan, Chief Pharmacist's Mate, U. S. Navy.

Among other members of the staff who are engaged in the active service of the Army or Navy are the following:

Dr. Leonard W. Ely, Associate Professor of Surgery (Orthopedics), granted leave of absence in order to go to Europe as a member of an Orthopedic Unit under Dr. Brackett of Boston, to study Military Surgery, especially Orthopedic Surgery.

Dr. Julian M. Wolfsohn, Assistant Clinical Professor of Medicine (Neurology), granted leave of absence on account of having been detailed by the United States Government to London to study shell shock.

Dr. Harry R. Oliver, Assistant Clinical Professor of Medicine (Serology), appointed Major in the United States Army Medical Corps, in charge of the laboratories of the Western Division.

Dr. Shadworth O. Beasley, Assistant Clinical Professor of Obstetrics and Gynecology, appointed Major in the United States Army Medical Corps, assigned to active duty with the Engineer Corps.

Dr. Harry L. Langnecker, Clinical Instructor in Surgery (Orthopedics), appointed Assistant Surgeon in the United States Navy, with headquarters at Mare Island.

Dr. Jay Marion Read, Assistant in Medicine in the Stanford service at the San Francisco Hospital, and Dr. John F. Chapman, Senior Interne in Medicine and Pediatrics at Lane Hospital, have joined the Army Medical Corps and been assigned to active duty.

Dr. E. C. Dickson, Assistant Professor of Medicine, has recently received a grant of $3000 from the State Council of Defense, in order to carry on work in Botulism for the Government.

By action of the Medical Faculty, a course in Military Medicine will be required of medical students in their senior year.

The Lane Medical Lectures, which are held every other year, were delivered this year by Dr. Simon Flexner of the Rockefeller Institute for Medical Research. The subject of the series was: "Physical Basis and Present Status of Specific Serum and Drug Therapy," and five lectures were given at the Medical School on the evenings of October 8, 9, 10, 11 and 12.

The fourth annual session of the Summer Graduate Medical Course was held from July 9 to August 17, 1917, and unusual interest was shown in the courses offered. Twenty-one physicians were enrolled in the various courses, which included the following subjects: Clinical Medicine, Röntgenology, Clinical Surgery, Ophthalmology, Gynecology, Otology and Laryngology.

The Four-Quarter System, which has been adopted both by the University and the Medical School, went into effect on October 1st, and classes will be held throughout the entire year.

The new Stanford University Hospital, erected

at a cost of $500,000, will be completed and ready for occupancy about November 1st. This hospital was planned as a future surgical unit of the university hospital, but for the present it will be used largely as a general hospital for the accommodation of private cases. The hospital will be open to all reputable physicians of the state.

Every effort has been made by the Board of Trustees and the Clinical Committee to make it an up-to-date plant and provision has been made for offices for consultation with special rooms for eye, ear, nose and throat work. A new X-ray department, a thoroughly equipped plant for hydrotherapy, electrotherapy and mechanotherapy have also been installed in the new hospital.

State Board of Health

SEPTEMBER MEETING.

At the regular meeting of the State Board of Health, held in Sacramento on September 1, 1917, the following members were present: Dr. George E. Ebright, president, and Drs. Fred F. Gundrum, Edward F. Glaser, Adelaide Brown, Robert A. Peers and Wilbur A. Sawyer.

The following appointments were made:

Dr. Ethel M. Watters of San Francisco, Sanitarian in the Bureau of Venereal Diseases.

A. M. Bean, Assistant in the Division of Biology in the Bureau of Communicable Diseases.

Miss Marion Lynne of Monrovia, Social Service Director in the Bureau of Venereal Diseases.

Robert G. Wray, Inspector in the Bureau of Foods and Drugs.

Mrs. Mary E. Delport, stenographer in the Bureau of Venereal Diseases.

The action of the secretary in giving temporary employment to Michael Burkel and Earl M. Tennis, bacteriologists, in connection with the co-operation of the board with the Navy in controlling meningitis in the naval camp at San Diego, was confirmed.

Miss Anna C. Jamme, Director of the Bureau of Nurses' Registration, was requested to prepare, in co-operation with the secretary of the board, a set of regulations for the conduct of midwives and to submit them to the board for adoption.

By resolution of the board, the quarantine of the eastern half of Siskiyou County against rabies, instituted on February 23, 1917, was lifted.

The following resolution requiring the reporting of all cases of tuberculosis to the local health officers was adopted:

"Resolved, That the privilege previously extended to physicians of reporting tuberculosis cases direct to the State Board of Health, instead of through the local health officials, is hereby withdrawn, and physicians are instructed to report all cases of tuberculosis to the appropriate local health officer, as in the case of the other communicable diseases which are required by law to be reported, and that health officers are instructed to exert unusual precautions to protect the records of reported cases of tuberculosis from public inspection."

Permission was granted to the Fort Wayne Anti-Tuberculosis Association to reprint the California State Board of Health's Primer on Tuberculosis.

Regulations for the prevention of venereal diseases were read, amended and adopted.

The Bureau of Venereal Diseases was authorized to issue salvarsan, or approved substitute, to accredited public clinics or hospitals for treating syphilis in the infectious stages and to health officers, or their representatives, for the treatment of persons under official isolation for syphilis.

A tentative draft of a proposed San Francisco ordinance for the prevention of venereal diseases, as prepared by a committee of the San Francisco Medical Society, was discussed. The board found that it did not approve of the proposed ordinance in its present form, as it was in conflict with the program of the State Board of Health for the control of venereal diseases.

The following resolution was passed relative to the care of venereal disease cases under official isolation or quarantine:

"Whereas, Counties are the appropriate units for the support of indigent sick and of contagious disease cases; be it

"Resolved, That in the enforcement of venereal disease control measures, said cases, where isolation or quarantine in public hospitals is required, should be cared for by the county hospitals except where otherwise arranged by local health officers."

Temporary permits to operate thirty-one swimming pools were granted on the recommendation of the Bureau of Sanitary Engineering.

A temporary permit was granted to the Petaluma Power and Water Company to supply water for domestic purposes to the city of Petaluma.

The board confirmed the action of the secretary in quarantining the San Lorenzo River at Santa Cruz for a distance of one thousand feet from its mouth, against bathing, because investigation by the Bureau of Sanitary Engineering had found that the lower part of the river was dangerously polluted with sewage.

The board decided that the irrigation of potatoes with sewage would not be permitted.

Four certificates as registered nurses were granted through reciprocity.

Licenses were granted on the recommendation of the Director of the Bureau of Foods and Drugs for the operation of 27 cold storage warehouses.

Cases of alleged violations of the Food and Drug laws were heard and many were referred to district attorneys for prosecution.

OCTOBER MEETING.

The State Board of Health met in Sacramento on October 6th, 1917. There were present Doctors George E. Ebright, president; Fred F. Gundrum, vice-president; Edward F. Glaser, Robert A. Peers and Wilbur A. Sawyer.

The appointment of Dr. Harry G. Irvine as Director of the Bureau of Venereal Diseases was confirmed. The appointment became effective September 21, 1917.

Amador County was transferred from the Northern State Health District to the Central District,

and Trinity County was transferred from the Northern District to the North Coast District.

Mr. Joseph Doman, Engineering Assistant in the Bureau of Sanitary Engineering, was granted a leave of absence until the expiration of his military service.

Delegates were appointed to represent the Board as follows:

Prof. E. J. Lea, Director of the Bureau of Foods and Drugs, at the meeting of State and Federal Food and Drug Inspectors of the Western District at Salt Lake on October 22nd to 24th.

Mrs. E. L. M. Tate Thompson, Director of the Bureau of Tuberculosis, at the annual meeting of the southwestern conference of tuberculosis at Grand Canyon on October 22nd and 23rd.

Dr. W. A. Sawyer, Secretary of the Board, at the annual meeting of the American Public Health Association at Washington, D. C., on October 17th to 20th.

Rules were adopted governing access to the records of the State Bureau of Vital Statistics and those in the offices of local registrars. One of the rules provided that any person, in order to obtain permission to inspect the records of the local registrar, must make written application stating the information he desires to obtain. Local Registrars are given the right to refuse the permission to search records if the object is not a proper one.

Permits were granted on the recommendation of the Director of the Bureau of Sanitary Engineering for the operation of 112 swimming pools.

Temporary permit was granted to the City of Vallejo to supply water from impounded reservoirs in the Wild and Green Horse Valleys. Temporary sewage disposal permit was granted to the Alameda County Tuberculosis Hospital. A permit was granted to the City of Anaheim to extend its Imhoff tank installation for its sewage treatment.

On the recommendation of the Director of the Bureau of Registration of Nurses the nurses' training school in connection with the Vallejo General Hospital, having been inspected and found not to meet the requirements of the Board, was not placed on the accredited list of nurses' training schools. The nurses' training school in connection with the Fairmont Hospital, San Francisco, was placed upon the accredited list for one year.

The Board made a ruling relative to graduates of accredited schools in other states where additional study is required after graduation for eligibility for registration as nurses. Included in the ruling was the requirement that where additional study is taken in California it must be pursued as undergraduate work and under the same regulations as pertain to the regular students of the training school.

Certificates as registered nurses were granted to 142 nurses who had passed the examination for registration held on August 22nd and 23rd, 1917. Three nurses were given certificates through reciprocity.

A large number of food and drug cases were taken up and hearings were held. The majority of the cases were referred to the District Attorneys for prosecution.

W. A. SAWYER, Secretary.

Quack Chamley Again Active

The State Board of Medical Examiners of California has been constantly active in an endeavor to suppress the operations of the above mentioned individual, who has been actively engaged in this state for several years. The records of proceedings before the Board for revocation of certificate, compiled since the present Board became operative, shows on page 47 in the matter of "proceedings to revoke the certificate of Samuel R. Chamley, issued February 9, 1889, under subdivision 3rd of section 14, chapter 354 of Statutes of 1913, as amended by chapter 105, Statutes of 1915," Nov. 4, 1915, complaint filed; Nov. 4, 1915, citation issued; Dec. 4, 1915, answer and demurrer filed; Dec. 15, 1915, respondent appeared with attorney and moved for continuance by reason of the absence by sickness of the attorney for Dr. Chamley, who had been handling the proceedings. Motion for continuance was denied. The demurrer interposed by respondent was overruled, the Board determining that the complaint sufficiently alleged an offense in compliance with the section of the Medical Act. Attorney Lecompte Davis appeared with Attorney John S. Cooper as counsel for respondent Chamley. The following witnesses testified and the matter was submitted: Mrs. M. E. Del Valle, Grace E. Allen, Dr. Walter Brem, Walter A. Beswicke, Dr. Harry Oscar White, Dr. Orville Witherbee. The Board determined that the evidence introduced was sufficient to sustain the allegations of the complaint and the respondent was guilty of the charge preferred and that the license of Samuel R. Chamley to practice medicine and surgery in the State of California was revoked."

After the action of the Board above noted, a restraining order was issued by Presiding Judge York of the Superior Court of the County of Los Angeles, and on June 27, 1916, Judge Shenk "cleared the way" for the State Board of Medical Examiners to serve on Dr. Samuel R. Chamley the order revoking his license as a physician in his suit against the Board, restraining the latter from proceeding further. At this time the Judge denied the injunction asked for by Dr. Chamley prior to the last mentioned date. The attorneys for Dr. Chamley on March 13, 1917, petitioned the court for a "writ of review."

Under date of September 30, 1915, the San Francisco Call printed an article opening as follows: "Following his indictment by the grand jury on the charge of obtaining money under false pretenses from Mrs. D. G. Hill of San Diego, detectives are hunting for Dr. Samuel R. Chamley, self-styled cancer expert." . . Under date of April 17, 1916, the Los Angeles Express printed an article noting that a "fraud" order had been issued by the Post Office Department against Samuel R. Chamley, alleged quack cancer specialist, who operated in San Francisco and Los Angeles. "The order was issued April 14 and the information was received to-day by Clark E. Webster, Post Office Inspector, Webster making a report to the department shortly before Christmas telling of the results of his investigations here. Post Office Inspectors at San Francisco at the same time were making an investigation there. The purpose of the order is to prevent the man from getting any mail at all. It will have the effect, in the opinion of the Post Office Inspectors, of putting him out of business."

Under date of August 24, 1916, the Los Angeles Times printed an article noting that "Mrs. Clara E. C., wife of Dr. Samuel R. Chamley, was prepared to open her fight for separation along another line." . . During the trial Dr. Chamley testified that several years ago his "income amounted to $20,000 a year but since the Post Office Department has issued a certain order, and through the action by the State Medical Board, he had lost all his practice with the result his income had fallen off to nothing. . ."

In the May, 1917, issue of "Brain and Brawn," published in Los Angeles, appears the following article: "Samuel R. Chamley, author of the cruel and false statement that 'every lump in a woman's breast is cancer,' was convicted of practicing medicine without a license, fined $100 and ordered imprisoned 100 days in the Los Angeles County Jail; the jail sentence was remitted on his promise never again to practice in California."

In the Long Beach Telegraph of May 13, 1913,

appeared an article advising that "Etta V. Niebel was awarded judgment for the full amount of her claim by Judge York yesterday. The trial of this suit to recover $800 and interest from March 31, 1899, developed the fact that Mrs. Niebel raised the money she paid Dr. Chamley by placing a mortgage on her home."

In a communication signed "R. P. Goodwin, Atty. Gen.," addressed to W. W. Kaufman, formerly attorney for the Board of Medical Examiners, appears the following: "The records of this office show that the order of revocation which was issued on March 4, 1910, revoking order No. 2829, dated December 25, 1909, and order No. 2877, dated January 24, 1910, so far as these orders apply to mail and money orders for Dr. S. R. Chamlee, S. R. Chamley, M. D., S. R. Chamley. This action was taken upon the affidavit filed by Dr. Chamley in which he promised to terminate forever the so-called 'home treatment' of cancer and to restrict whatever business he might do in that line in the future to personal treatment. In support of his application for the revoeation of the orders, he represented that he was financially ruined and that the return of letters addressed to him personally marked 'fraudulent' was doing him grave injury. His attorneys also assured this office that it could rely upon any promise made by Dr. Chamley in this connection. With referenee to the repeated attempts which had been made to evade the 'fraud' orders Dr. Chamley stated that a physician formerly employed by him was responsible for such attempts, but that upon learning of the facts Dr. Chamley had discharged him. In view of this representation and of the fact that the order covered his individual name and prevented the delivery of personal mail, it was deemed proper to withdraw the orders referred to and this was accordingly done. I note your statement that you are informed that Dr. Chamley is pursuing the same course that he did before the 'fraud' orders were entered. If you have any evidence of this fact, this office would be glad to receive it, and take whatever action the facts may warrant. Respectfully yours, R. P. Goodwin, Atty. Gen."

Quack Chamlee has a lurid record also in St. Louis where, according to Dr. G. A. Jordan,[1] he advertised extensively, "claiming to cure eaneer without the knife or pain by means of an application made from a South Sea Island plant, a discovery of Dr. Chamlee's."

He was finally put out of business, a laudable procedure, in which the California State Board of Medieal Examiners co-operated.

There are appended certain letters which are excellent illustrations of the damnable quackery and mercenary cruelty of Quack Chamlee:

Palo Alto, Calif., Nov. 30, 1913.

Dr. Chamberlain Co.,
B-436 Valencia Street,
San F., Cal.

Dear Sirs:

Have noted your ad as regards lump in woman's breast. My wife has had trouble with a lump in her left breast for a long time. She has used salves but they don't do no good. Doctors want to operate but she won't stand for it, and noting your guarantee offer. I wonder if your cure could help her, as I am afraid it was cancer. It seems larger than it was. Please write and let me know.

Yours truly,

B. W.

S. R. CHAMLEY, M. D.,
Offices, 436 Valeneia Street,
San Franicsco, Cal., Dec. 4th, 1913.

Mr. B. W.,
Palo Alto, Cal.

Dear Sir:

Your letter received and carefully studied. Candor compels me to inform you that any hard lump in a woman's breast is always cancer. From your letter she might be past cure.

We hope it is yet in a perfeetly curable stage but it is never far to the deadline in this awful disease With every day's delay the chance for eure is less. Delay adds to the difficulties of treatment, makes it more expensive and the case more liable to be refused.

If cancer is neglected there surely eomes a stage when it is no longer eurable. Honesty has eompelled us to refuse hundreds who had waited too long, all of whom could have been eured had they come in time, but they were self-deluded or badly advised and lost their lives by waiting until the disease was too deeply rooted to eure and we were forced to refuse them.

I dislike to alarm you but cancer will not permit of much trifling or delay. Quick and decided action is required to save life. He who seems harsh in warning of danger is often a true friend.

To be cured in that stage you must come and stay here just two weeks. Cure is certain and permanent if treated before the deep glands in the arm-pit are poisoned, then cure is often impossible and death eertain and soon.

Our price is always reasonable but varies according to size and number of cancers. We cannot set a definite priee without examination: that would be only guessing. You can put the price in any bank here until satisfied of a eure.

Room, board and poulticing (if needed), $1.50 per day extra.

Please get what money you can and make arrangements to get more if needed and come at once as delay in this case is very dangerous.

Yours sincerely,

S. R. CHAMLEY, M. D.

Dictated by Dr. S.R.C.

CANCERS AND TUMORS CURED
Without Knife or Pain, or Pay until Cured.
Absolute Guarantee.
S. R. CHAMLEY, M. D.,
Offices 436 Valencia St.
San Francisco, Cal., Jan. 19, 1914.

Mr. B. W.,
Palo Alto, Calif.

Dear Sir:

We have been expecting you to come for treatment almost any day, and we have become anxious about your waiting so long. You are, for some reason whieh we do not understand, neglecting yourself.

Considering all the testimonials we have given you, and also the full and complete explanation we have made for your benefit, you ought not to have any doubt about our ability to cure eaneer.

Could you but see the number of eancer sufferers we must refuse almost daily because they delayed until their cases became hopeless; could you but see them go away in utter despair to die in a short time, and then could you realize that your case will be like theirs in the near future unless properly treated, you would not wait another day.

It must be that you do not realize the awful danger from eancer. You may think your trouble does not amount to much, as it does not pain or inconvenienee you. Let me tell you, friend, that all such things prove fatal if left alone or if not properly treated. None pain until almost past eure.

Surely you are not willing to allow yourself to die of such a terrible disease as caneer. Therefore, we give you this one more warning. If it is not heeded we will feel that we have at least done our duty.

Hoping that you will realize the dangerous condition you are in, the duty you owe to yourself and to your friends, and that you will grant us

[1] Am. Jour. Pub. Health, 1917, VII, 727.

the opportunity to give you a new lease of life and answer this at once, we beg to remain,

Yours very sincerely,
S. R. CHAMLEY, M. D.

Dictated by Dr. S.R.C.

(Note:—Same heading, i. e. Dr. C.'s letter head.)
San Francisco, Cal., Jan. 10, 1914.

Mr. B. W.,
Palo Alto, Cal.

Dear Sir:

(Same letter as that dated Jan. 19, 1914. Must have been a circular letter.)

The following letter was sent to physicians:

(Note:—Same heading as the other, i. e. the Dr.'s letter heads.)

San Francisco, Cal., (dateless).

Dr. E. D. T.,

Dear Dr.:—I take an oath that I have made nearly one-half million dollars with my cancer remedy. I am now an old man (63) and will sell it to you for only $20.00 and teach you by my book and typewritten correspondence to cure cancers on any part of the face and body. It is a most wonderful, strange but fortunate combination of several medicines easily obtained at any large drug store. I often get $1000 for curing a cancer and $300 to $500 is very common.

I firmly believe that I have cured more cancers than any other Doctor living. I have been curing cancer over 46 years, beginning at Troy, Illinois, and I cannot work at it many years longer and want to give it to the world, but it requires some teaching on a few specially hard and uncommon cases, besides the cost of my book of instructions, formulas and directions for curing. I take an oath that I believe it is the best treatment on earth to-day for cancer in all its many forms. I assure you it is no fraud, else I could not have made so much money. Many physicians have told me that I should teach just as many other physicians in separate communities as possible. You can make thousands of dollars with it and I will teach you how and give you all the formulas and all the secrets that I have worked out in my 40 years curing cancers. It will kill and cure cancer in the mouth without any danger whatever.

I have had large offices in St. Louis, Chicago, Los Angeles and here in San Francisco in the last 25 years, three of them running all at once. I have thousands of excellent cures all over the United States. If you buy my remedy and cure one person, then tell a few you have discovered a new sure cure for cancer, everybody will soon know it and talk about it, newspapers will mention it and you can soon get many new cases.

Now, if you think you might buy this wonderful treatment complete in all its details, send 24 cents in stamps or a 25-cent piece in a letter for my 120-page book of testimonials of many of the most wonderful cures of cancers the world has ever known.

Price only $20.00 for a treatment that I have been making from 20,000 to 30,000 dollars with every year for many years. Do not neglect to buy this while I am able to teach you by answering all inquiries about any hard cases, or I will give you half the money from any bad cases you send me. I have just taken two $2000 cases and a $1000 case, $3473 of it in advance.

Yours for the good of humanity,
S. R. CHAMLEY, M. D.

In the Journal of the A. M. A. recently[2] is copied a circular letter by Quack Chamlee, addressed to homeopaths and eclectics. The first four paragraphs are given as follows:[3]

"S. R. Chamley—sometimes he spells his name 'Chamlee'—is a resident of Los Angeles. Chamley is the 'cancer cure' quack who frightens impressionable women into the belief that 'any lump in a woman's breast is cancer.' He has been swindling the sick for years. In December, 1909, while living at St. Louis, but also operating from Los Angeles, a fraud-order was issued against him under his various names applying both to his St. Louis and to his Los Angeles offices. Then Chamley changed the name of his concern to 'St. Louis Sanitarium,' using a postoffice box; in January, 1910, the fraud-order was extended to cover this new name. Chamley transferred his swindle to Oakland, Calif., and some weeks later the fraud-order was still further extended to cover the Oakland address. He opened offices in St. Louis and Los Angeles under still another name, the 'United Specialists Cancer Cure Company,' and the federal authorities in February, 1910, denied these the use of the mails."

"In March, 1910, the fraud-orders were revoked in so far as they affected Chamley's personal names, the quack having agreed to go out of the 'cancer cure' business and having filed an affidavit to this effect with the federal authorities. His oath, as might have been expected, was as worthless as his business is villainous. The Journal in August, 1915, called attention to the fact that Chamley was sending out letters to physicians offering to sell for $20 full instructions that would enable physicians to carry out the same cruel swindles that he himself had waxed rich on. Also he was boldly advertising his fraudulent cancer cure in over a hundred newspapers. About the same time Chamley was indicted by a grand jury at San Francisco for obtaining property under false pretenses. From the newspaper reports it seems that he frightened a woman into believing she had cancer and then obtained a promissory note for $2000 for an 'operation' which he persuaded the woman he would have to perform. After the victim had paid $1500 on the note, the quack, it appears, told her that she must be operated upon again and he demanded more money. Two women who acted as nurses for Chamley are said to have testified before the grand jury that Chamley admitted that he knew the woman had no cancer but that he meant to get all the money he could.

"The federal officials again took action and still another fraud-order was issued against Chamley. At that time Judge W. H. Lamar, solicitor for the Post Office Department, in his memorandum to the Postmaster-General, seathingly summarized the case against Chamley thus:

"'It may be said that the business of Dr. Chamley, contemplating as it does the extortion of money for a worthless and often harmful "treatment" through a deliberate propaganda of terror among impressionable women by means of the cancer advertisements and other literature referred to above, is one of the most vicious which has ever been before this office, and constitutes a more sinister parasite on the community than the dread disease which Dr. Chamley offers to cure.'"

At present Quack Chamley is seeking doctors through whom he can operate as he is not allowed to solicit or treat patients under his own name. While no decent physician will be tempted by the opportunity to learn this "cure," still it serves to show that Quack Chamley is bound by no slightest consideration of honor or decency.

Quack Chamley is still doing business and the united decent sentiment, both medical and non-professional, is none too strong to oust him. The State Board of Medical Examiners has a nearly hopeless fight on hand so long as such quacks can find advertising media and are allowed the use of the mails. Nevertheless means must be found to eradicate Quack Chamley permanently.

[2] 1917, LXIX, 749.

[3] See A. M. A. Sept. 1, 1917, p. 749.

Department of Pharmacy and Chemistry

Edited by FRED I. LACKENBACH.

LITTLE PURE ZINC OXIDE ON THE MARKET.

Examinations made by the Bureau of Chemistry of the United States Department of Agriculture show that very little zinc oxide on the market in the United States complies with the standards of the U. S. Pharmacopoeia. Nearly all of the samples examined contained an excessive amount of lead. The samples were labeled "Not U. S. P.—Containing Small Quantities of Lead," and therefore complied with the Food and Drug Act. The labels on the packages in most instances will probably come to the attention of the druggists, but not to the attention of physicians. The medical profession will therefore not be advised as to whether or not zinc oxide preparations are made from standard ingredients. Conditions may arise where a zinc oxide preparation contaminated with lead may do injury. A limited supply of U. S. P. zinc oxide is available and physicians may protect themselves and their patients from possible injury by calling for such material on their prescriptions.

New Members

Alter, S. M., Los Angeles.
Bailey, Ellsworth, Berkeley.
Chapline, F. L., Orange.
Clark, D. A. Moorpark.
Cocke, John V., Los Angeles.
Cope, J. Hal, Pleasanton.
Curtiss, W. H., San Diego.
d'Azevedo, Joseph L., Oakland.
Dietrich, Henry, Los Angeles.
Early, C. E., Los Angeles.
Evans, Chesley L., Los Angeles.
Fibush, Arthur, Oakland.
Gates, M. G., Los Angeles.
Granger, Arthur, Los Angeles.
Hodson, Wm. H., Los Angeles.
Jones, E. F., Oakland.
Josephs, Louis, Los Angeles.
Kalionzes, Constantine R., Los Angeles.
Kearney, Elizabeth F., Los Angeles.
Kelley, J. W., Los Angeles.
Lamoree, Edith A., Ventura.
Luckie, J. B., Pasadena.
Macdonald, G. C., San Francisco.
MacLean, F. Gordon, Oakland.
McKenna, W. J., Los Angeles.
Nutting, J. Floyd, Los Angeles.
Phelan, C. A., San Francisco.
Pinkham, Chas. B., San Francisco.
Reeves, J. Walter, Los Angeles.
Saeger, B. L., Ojai.
Scatena, F. N., Sacramento.
Shaffer, Chas. P., San Dimas.
Skinner, Cynthia A., Los Angeles.
Smalley, C. A., Los Angeles.
Smith, Bertnard, Los Angeles.
Toland, C. G., Los Angeles.
Wythe, Stephen, Oakland.

Transferred

Shrodes, Geo. H., Porterville, from Kern County to Tulare County.

Obituary

Colliver, John Adams, M. D., Los Angeles, Calif.; University of California, San Francisco, 1899; aged 45; a Fellow of the American Medical Association; instructor in pediatrics in his alma mater; a well known specialist in diseases of children; died in the Angelus Hospital, Los Angeles, August 22, from pneumonia following a surgical operation.

Cornwall, Frank, of San Francisco, died in Sonoma, Cal., on August 30th.

Downie, Cullen L., of Carpinteria, aged 71 years, died December 18, 1916, after a long illness. He was a graduate of the Med. Dept. Univ. of Michigan, '71, and Univ. of Calif., '93.

Follansbee, Elizabeth A., M. D., Los Angeles, Calif.; Women's Medical College of Pennsylvania, Philadelphia, 1877; aged 77; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of California; for twenty-five years professor, and thereafter emeritus professor of diseases of children in the University of Southern California, Los Angeles; said to have been the first woman to practice medicine in southern California; one of the founders of the Hospital for Children, and Training School for Nurses, in San Francisco; died in the psychopathic ward of the Los Angeles County Hospital, August 22.

Grubb, T. Elmer, of Los Angeles, 29 years old, died at his home on August 24, 1917. He had practiced in Los Angeles since graduating from the University of California in 1912, and is survived by a wife and two children.

Kergan, John A., died in San Francisco, on September 25, 1917, of lobar pneumonia.

Knight, Dr. Cameron, of San Francisco, Cal.; California Med. Coll., '92; died at the Old People's Home in San Francisco, on August 28, 1917, aged 86 years.

Lang, James, M. D., Pasadena,. Calif.; Bellevue Hospital Medical College, New York, 1879; aged 86; died at his home, September 7, from senile debility.

Mehlman, Emma, M. D., died at her home in Oakland on September 19, 1917; cause of death, acute leukemia. Dr. Mehlman's death is most untimely as she had just completed her studies and had passed the Board and received her license to practice medicine.

Nutting, Charles W., M. D., Etna Mills, Calif.; Atlanta (Ga.) Medical College, 1876; aged 65; a Fellow of the American Medical Association, and past grand master of the F. and A. M. of California; for two years demonstrator of anatomy in his alma mater; died at his home, September 20.

Paton, Charles James, M. D., San Francisco; University of California, San Francisco, 1883; surgeon for many years in the service of the Pacific Mail Steamship Company, and surgeon on the steamer "Peru"; is reported to have died at sea, August 22.

Pyburn, George, M. D., Sacramento, Cal.; Cleveland Univ. of Med. and Surg., Cleveland, Ohio, '59; aged 86; died at his home, July 20th.

Quigley, Dr. John M., of San Francisco, died at St. Mary's Hospital on September 12th, from injuries received when his automobile capsized in Golden Gate Park. He had practiced in San Francisco for the past twenty-five years; was a graduate of the Med. Dept. Willamette Univ., Ore., and of the University of California, '95.

Thompson, Dr. Charles Henry, of Novato; Homo. Med. Coll., Pa., '67; (C) '76; died at his home on August 15th. He practiced in Santa Rosa for years and was a director of the Santa Rosa National and Union Trust Company. He was aged 75 years. Heart trouble was the cause of death.

Weed, Frances Tudor, M. D., Los Angeles; Univ. of Michigan, Ann Arbor, '95; aged 58; formerly deputy health officer of Grand Rapids, Mich.; while crossing a street in Los Angeles, August 3, was crushed between street cars and instantly killed.

Wood, G. N., of Blue Lake, Cal.; Chicago Med. Coll., Ill., '78; (C) '01; has deceased.

California State Journal of Medicine

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Contributors, subscribers and readers will find important information on the sixteenth advertising page following the reading matter.

VOL. XV DECEMBER, 1917 Number 12

Many physicians who have joined the colors are still able to attend their practice to some extent. Until these men are called away we should avoid misleading statements regarding their whereabouts. Patients seeking their family physician should not be given to understand that he is off to war until he has gone.

MEDICAL PATRIOTISM AND THE STATE SOCIETY.

It has been iterated and shall be reiterated that patriotism consists in actions as well as words and of the two, actions are the more important. From the beginning, American men of medicine have been noteworthy for their maintenance in vigor and purity of the institutions and ideals of their country. Nor have they fallen short in the present emergency. The response in California to the summons of the Army and Navy is enthusiastic and liberal. Our quota will be provided. There are, however, certain less public and obvious fashions of expressing and rendering patriotic service, and these must not be lost to attention.

For instance, the physician finds the duty of public service, which is his constant companion, enormously intensified in war-time. Then must he educate, and watch, and prevent, and organize as he never did in peace-time. Then must be take counsel of himself and his fellows, for the health and security of the civil population, that they be protected from themselves as from the harpies who would prey upon them, that their ignorance and indifference fall not a spoil to the politician and the money-seeker. All of the public obligations of the physician, by that very token, are greater in time of war. And they are greater because on the proper fulfillment of them depends the health and fighting efficiency of the military, and the health and supporting efficiency of the civil population.

Hence comes the necessity now for the physician in California to assume his public role as he has not done heretofore. Hence the necessity for him to organize as he has not done before. Organization and efficient assumption of these public obligations by the medical profession are thus a definite and clear public duty. They are a necessary form of patriotic service. The doctor who conscientiously or of necessity is not in uniform, cannot escape this obligation. If he is neither in service nor in the organized ranks of his profession, then he is a slacker from the obligations of a public nature which rest on our profession to-day. The war is a trumpet call for every reputable physician to enroll in his local county medical society, and help direct and extend the useful functions of the State Society.

The State Society needs every doctor in the

state. It is only half efficient when its membership includes but half the doctors of the state. Now is the time for every and each county society to make an organized campaign to increase its membership to include the medical profession of its territory. This is a patriotic duty for each society and a patriotic obligation on it. A measure of the energy and life of the county society is found in the ratio of its members to the entire profession of its territory. The State Society is not a political machine, nor a plaything of a clique, it is the organized medical profession of the state and it can accomplish great things for the profession, and through them for the civil body, and beyond that for the country, if only this clear-cut obligation is felt, on the one hand by each county society, and on the other, by each physician in the state.

Each county society should initiate an aggressive and carefully planned campaign, as a patriotic duty, to increase its membership to the available limit.

MORE MEDICAL OFFICERS.

At the last meeting of the Council of National Defense, Medical Section, a complete list of the physicians in California who have entered the Medical Officers' Reserve Corps was presented. Their number totals to date 665 men. The entire number required from the State is 800. It is therefore apparent that there are approximately 135 men yet to volunteer for military service.

This committee has made up a list of all the physicians in California of military age and has classified them according to their age, number of dependents, teaching position, public service and physical fitness. These names have been gathered into groups according to counties and the lists will be sent to the County Committees for National Defense. A concerted effort will be made to fill the required number of enrollments.

Men throughout the State who have not known whether it was their duty or not to enroll in the M. O. R. C. will have plainly put before them the necessity of such service. The final judgment, however, will have to be left to their individual consciences and their more intimate knowledge of their personal affairs.

It is quite natural to expect that the unmarried men, or men of small families whose circumstances permit the sacrifice, should be expected first to join the colors, rather than men of greater responsibilities. It is not only their duty, but it is a privilege, and doubtless will result in a personal advantage to them. They will be serving their country and entering into the biggest event in history, and at the same time gaining a fund of professional experience which will be of service throughout their lives.

Therefore, if you are called upon by your local committee, remember that the need is still great, your country calls you. It is up to you to make the decision.

ORAL EXAMINATIONS FOR MEDICAL LICENSES.

The first examination under the new Medical Practice Act which, as has been described previously, allows osteopaths to be licensed on oral examinations, provided they have made certain preliminary requirements, was held in Los Angeles early in October. This examination left much to be desired in the way of thoroughness and of providing a genuine test of proficiency in the candidates. The list of questions asked is fairly comprehensive. The fact of its being the first oral examination given under the new law probably accounts for its not being more stringent. It was doubtless difficult to make it as thorough and practical as the Board would have wished.

That this is true is indicated by the improved character of the second examination held in Los Angeles and the third held in Oakland. If the Board of Medical Examiners improves the character of these oral examinations, as their policy so far indicates that they will do, there can certainly be no just criticism of inadequate examination. In another column is given a résumé of the results of these examinations.

As has been said editorially in former issues, the medical profession of the State is vitally interested in the character of these oral examinations. Those osteopaths who prove their efficiency and who are licensed as physicians and surgeons may become eligible for membership in the State Medical Society through membership in the local county societies. To do this, it is only necessary for them to practice as regular physicians and not as osteopaths or adherents of any special medical or pseudo-medical sect.

It therefore behooves the medical profession of the State of California particularly to see to it that the character of these oral examinations is fully satisfactory in order that those osteopaths who qualify for membership in the State Medical Society may be received with good grace and with the cordiality which is their due. If osteopaths who pass the State Board of Medical Examiners are known to have passed on their actual merits, there will be no valid criticism on this ground of their being received later into the County Society. It is very much to be hoped that every candidate who passes the State Board of Medical Examiners will make himself eligible for membership in his local County Society.

INDEMNITY DEFENSE FUND.

The attention of Contributing Members is expressly directed to the due dates of their notes for the balance of the assessment. These notes are maturing now in large numbers, and all notes will become due on or before December 31, 1917. Although each Contributing Member will receive a notice from the Secretary, do not wait for such notice, but mail your check at once. If the payment is not made, your coverage lapses. Do not overlook or forget to take up your note on or before its maturity.

The initial assessment for the organization of

the Indemnity Defense Fund was fixed at $30.00, one-half to be paid in cash upon subscription, and the balance by note due one year thereafter. In fairness to those who joined the Fund promptly, it was necessary to fix a limit upon this method of payment, and therefore DECEMBER 31, 1917, was settled upon as the LAST MATURITY DATE FOR NOTES.

Commencing January 1, 1918, the Council has decided that the full initial assessment of $30.00 be paid in cash.

Members should have in mind that the Council does not contemplate an annual assessment of $30.00, or any other sum, to maintain the Indemnity Defense Fund. The experience with medical defense for the last eight years warrants the assertion that an annual assessment of $30.00 will not be required. In all probability a second assessment will not need to be levied for a year or more and it may be that the Fund can be maintained for as low as $10.00 per annum.

Members should also understand that this is not insurance, but an indemnifying association which possesses all of the good features of insurance with the added advantage that it can be carried on a much more economical basis than any insurance proposition.

We can assure members that they not only have better protection by our own system of Defense and Indemnity, but that the interest and co-operation of organized medicine stands behind their cases.

This is about the time of year that the question arises whether to renew your policy in your old company or to go into the State Society. Our advice has been to *do both*. But, if you can only join one organization,—join that which combines superior protection with mutual interests.

We urge you to join the Fund.

THE PEOPLE'S COUNCIL.

There has been received for gratuitous publication in the JOURNAL a reading notice of certain lectures by one, Scott Nearing, under the auspices of "The People's Council." On its receipt the following letter was sent to the secretary of that organization:

"November 13, 1917.

"To the Secretary of the People's Council of America, Northern California Branch, 68 Post St., San Francisco.

"Dear Sir:

"I am in receipt of a reading notice concerning the lectures of Dr. Scott Nearing. I find myself in some doubt as to the exact status of the People's Council of America. May I ask for explicit statements on the following points:

"1. What is the object of your society?

"2. What is your attitude toward the present governmental administration under present war conditions?

"3. Is it within the purpose of your society to further in every possible way the prosecution of the war against Germany?

"Very truly yours,

"ALFRED C. REED, Editor."

The following reply was received:

"San Francisco, Cal., Nov. 14, 1917.

"Mr. Alfred C. Reeds,

"135 Stockton Street,

"San Francisco, Calif.

"Dear Mr. Reeds:

"Your letter inquiring about the purposes of the People's Council was received this morning. Although one person cannot presume to speak for the People's Council, I can answer your first question by the enclosed announcement. Personally, my attitude towards the present administration is the same as that of all thoughtful persons, namely: support is given the administration when it carries out the will of the people, and the administration is opposed when it does not. Your third question is also answered on the circular.

"If any forther information is desired, it will give us great pleasure to furnish the same.

"Very truly yours,

"WM. SHORT, Chairman."

The "enclosed announcement" noted, was entitled "The Truth About the People's Council." As will be noted, the reply given above does not answer the second question asked, nor did the enclosed circular answer the third question asked, the writer to the contrary notwithstanding. The first question is answered in the circular in very inexact and general terms, and no details are given which would enable the reader to form a judgment as to the answer to be expected to the second and third questions propounded in the letter of the editor.

The circular states certain truisms to which we naturally agree, as, for instance, "that militarism . . . must become a thing of the past." It also states that "there must be a speedy and democratic peace." It is useless to analyze the matter further. Peace is desired by all concerned, but God forbid that it come before the destruction of German militarism.

The People's Council, having implied some sympathy with its aims on the part of the JOURNAL by submitting a reading notice, hereby receives its answer. We have the most complete abhorrence for the entire institution and emphatically condemn it because of our conviction that it is subversive of the ends for which our fellows are in the trenches in France. We cannot be loyal to American democracy or the traditions of American medicine, and countenance this thing. Its ugly head savors of sedition and treason. We will have none of it. We feel that to offer its propaganda for publication to the medical profession is an open and direct insult to the medical profession, which has given and is giving and will continue to give its best effort, and skill, and loyal support and life itself, in support of the principles for which this nation is at war. California physicians to the number of nearly seven hundred, have enrolled in their country's service. It is their honor and our honor. Let us have none of this so-called People's Council. There is abundant work for all in patriotic lines. Let us do it.

A BAD SITUATION.

Two California medical colleges are listed in Class C by the rating of the Council on Education of the American Medical Association. One of these is the College of Medical Evangelists, of Loma Linda and Los Angeles. This, so we understand, has raised its standards, facilities and clinical material, and will doubtless soon receive higher rating. The second Class C institution is the College of Physicians and Surgeons of San Francisco. In its reference, attention is called to the resignation of a member of its faculty, as printed under Correspondence in this issue.

It has so happened that graduates of this institution have been licensed to practice by the State Board of Medical Examiners and certain of them have been drafted for National Army service. The military authorities refuse to recognize their claims for transfer to the medical corps, much less that they be commissioned as medical officers, on the ground that the school from which they graduated is unsatisfactory and of Class C rating. Two questions arise from this situation.

In the first place, the medical profession of California does not want any Class C medical college in the state. Such colleges should be forced at once to disorganize or else at once to raise their standards to a satisfactory level. As we understand the College of Medical Evangelists is accomplishing this end satisfactorily, these remarks are directed solely at the San Francisco College of Physicians and Surgeons. It is not just to present or prospective medical students to allow the possibility of their entering such a school. It is not just to the public to allow them to receive the M. D. degree.

In the second place, the State Board of Medical Examiners owes an explanation to the medical profession on the one hand, and to the lay public on the other, for the licensing up to the present time of graduates of this college, if these graduates are not able to obtain recognition for their medical work from the military authorities. Such protection of the health interests of the public is not satisfactory. It is difficult to understand why California should admit graduates of this college to examination for license when thirty-nine other states refuse such permission. A more strict policy might well be expected in the future.

EDITORIAL COMMENT.

Under the heading of "Correspondence" will be found a letter from a Belgian soldier at the front, written to a lady who had sent a box of cigars. To receive such a letter should be inducement enough for many of us to follow her example.

We have meatless days, and wheatless days, and we economize, or imagine we do, in various ways, all to the good end that the money and rations of the allied fighting forces may be conserved. There is another way, not so far advertised, in which millions could be raised in a manner having certain distinctive advantages. These millions could feed the hungry in France and Belgium, or support the Red Cross, or be turned to the comfort of our military, or be used in several other excellent ways. These millions could be raised by contributions from every class of our society, rich and poor alike, and each would automatically give according to his real ability to give. Moreover, these millions would be raised without real hardship to anyone, without taking money from other worthy or necessary objects, and with a very probable gain in health and well-being for the donors. These millions, in short, could be raised by having every week a smokeless day on which the money that otherwise would be spent for tobacco would be turned to this fund. How about it? Why not try it?

In an interesting article entitled "The Food Problem and Its Solution," published in the "Fortnightly Review," attention is drawn to the fact that the brewing industry represents an enormous wasteful drain on the grain resources of Great Britain. The writer quotes the figures presented by Mr. Prettyman in the House of Commons in November last, according to which grain and sugar were used in distilling and brewing to the following extent during the year ending September 30, 1916:

	Tons.
Barley	1,224,200
Other corn and grain	305,176
Rice, rice grits, flaked rice, maize, grits, flaked maize and other similar preparations	67,578
Sugar	119,999
Molasses	41,115
Total weight	1,758,068

For a country which regularly imports large quantities of grain in order to supplement its own home-grown supply, it is indeed pertinent to point out, as does the writer of this article, that the significance of the above figures is apparent when they are compared with the British wheat harvest. As the latter comes to about 2,000,000 tons per annum, it follows that in the year ending September 30, 1916, a quantity of grain, equivalent in weight to four-fifths of the whole British wheat harvest, was converted into intoxicating drink. ". . . It is extraordinary that whereas the Government has put the people on their honor to reduce their consumption of bread and sugar, the drinking section of the community have not similarly been told to limit the consumption of drink which is manufactured from grain and sugar."

The writer has undoubtedly indicated one of the chief items of food waste permitted to go unchecked. Conditions are entirely similar in this country and, as our readers know, it appears very unlikely that any effective control of this form of waste will be effected. Unlike the writer of the "Fortnightly Review," however, we are not at all surprised for, after all, the reason for the Government's failure to move in this matter is plain. How much longer, however, will the intelligent people of the community submit to dictation at the hands of those who poison the public health for personal gain?—N. Y. Weekly Bull. Dept. Health.

Will you please turn to the heading of the editorial page and notice the unduly large number of blanks in the list of county associate editors? Who is *your* county editor? If his name is not on the list, please have it put there at once. Do not be so absorbed in your own local round that you have no interest or concern for the State Society with which you are affiliated. We must have this list filled up at once. Do it now.

How many physicians, you included, can sign their names legibly? How many can write a legible prescription? And if they can, how many actually do these things? It would surprise many a doctor to know the difficulty and legal penalties which not infrequently follow an unintelligible signature on the records of the secretary of the State Society and of the State Board of Medical Examiners. In the present day of typewriters, every communication for publication, and most for correspondence, should be typed, with good margin, double spaces and, above all, with a legible signature. Observe your handwriting objectively and see if it really is legible.

Remember that the advertising pages contain some interesting things in addition to the jokes.

The answer to "An Open Letter Reply" in the November issue of the Journal was contributed by Mr. F. W. Peabody, a man whose close and accurate study of Christian Science has made him worth hearing in his opposition to it, and whose opinion is based on facts of experience and record.

Readers of papers for the State Medical Society meeting at Del Monte in April 1918, are reminded that the title and a short synopsis of the paper must be in the hands of the Secretary of the Committee on Scientific Program by December 31, 1917, or the place reserved on the program cannot be held. After December 31st no applications for places on the program can be considered.

In order to practice medicine, dentistry, or pharmacy in the Dominican Republic it is necessary for a foreigner to pass an examination before the Professional Institute in Santo Domingo City. This examination, which must be taken in Spanish, consists of two hours of theory the first day, and on the second day two hours of practice on a case selected by the examiners. The successful candidate is given a certificate by the institute. In addition to passing the examination before the Professional Institute it is necessary for the applicant to present a diploma from a college of recognized standing in the profession, duly registered and legalized. Dominican medical students usually complete the course at the medical school of the University of Santo Domingo and then finish their studies in the University of Paris. Almost all of the dentists and pharmacists are graduates of institutions in the United States. There are no American doctors, dentists, or pharmacists practicing in the Dominican Republic.

Special Articles

THE DISEASES OF WAR: THEIR PREVENTION, CONTROL AND TREATMENT.*

(The Handling of Infectious Diseases in the Field.)

By MAJOR LLOYD L. SMITH, Medical Corps, United States Army.

The diseases responsible for the greatest losses in war may be practically divided into two main groups: (a) those of the infective intestinal type—typhoid, paratyphoid, dysentery, and cholera; or (b) those conveyed by vermin—typhus and plague.

As these diseases and their specific organisms are the same as those met with in peace, the high disease rate of troops on active service may be either due to the lowered resistance of the troops, or to increased facilities of infection. The reason for these increased facilities is easily understood. The improvisation of measures to supply pure water, and the disposal of excreta; over-crowding of tents, to an extent; the absence of suitable means of isolation and disinfection; insanitary conditions—largely unavoidable, inseparable from the stress of war—all these play their part in the causation of these disease rates in war.

Typhoid fever illustrates, very well, the facts relating to the infectious diseases, which, in the South African War, caused 42% of the total death rate. Prior to antityphoid inoculation, typhoid fever has hitherto broken out in expeditionary forces toward the end of the first month of service, in spite of excluding men who are under suspicion of being in the incubation stage. As an illustration, the experience of the American camp for concentration of troops about to proceed to Cuba, may be taken. Every camp was infected by enteric within seven weeks; and to this disease was attributed 80% of all the total deaths, while 20% of the total personnel in the camp contracted typhoid. For a long time, it was thought that the troops hadn't been thoroughly examined before departure, or that the disease developed spontaneously. The finding of the typhoid carrier has dispelled much of the haze surrounding this mystery. The facts were as follows: That the troops included typhoid carriers; the specific germ was of low virulence; the transmission of these organisms through the bodies of a number of men increased the virulence; the men with lowered physical resistance supplied the early sporadic cases; and the outbreak assumed the proportions of an epidemic, after the necessary interval required for the development of the secondary infections. The modes of the secondary infections are given as follows: (a) Contact infections. In the Spanish-American War, 66% of all the cases of typhoid fever were traced to the infection by the other men in the same tent. It was also noted that certain tents in heavily infected camps remained free from cases throughout, although their occupants mingled freely with the rest of the personnel and

*An address delivered before the Pacific Association of Railway Surgeons, St. Francis Hotel, San Francisco, Aug. 24, 1917.

used the same water, kitchen and latrines. (b) Ambulatory typhoid and premonitory diarrhoea. It has been noted that outbreaks of typhoid fever have been preceded by epidemics of apparently non-specific diarrhoea. A possible explanation of this is that the specific bacteria in the passage from one individual to another gradually increase in virulency; at first, they give rise only to diarrhoea, and, while not causing blood infections, however, give rise to an intestinal irritation. This was regarded as established by the Reed Board of the U. S. Army in 1898, when it was found that those who suffered from an initial diarrhoea were less likely to have subsequent attacks of clinically typical typhoid fever. Whether one regards these cases as mild or not, the fact remains that outbreaks of diarrhoea in war time, deserve especial consideration and study. Diarrhoea should be carefully watched for, and is simply a warning that more stringent measures may be required. Concerning the so-called "walking typhoid," it may be said that the Reed Board considered that cases of diarrhoea gradually merge into ambulatory typhoid; and it was estimated that only 46% of all cases of genuine typhoid were diagnosed as such. (c) Infectivity of typhoid at various stages of an attack. The most important point to remember about clinically typical typhoid is that infectivity is marked in the incubation stage. It has been shown that during the second week of incubation the infectivity is little less than that of the first two weeks of the developed disease and is responsible for more than twice as many infections as were traced to the convalescent period. (d) Dust and mud. Dust is regarded as an infective agency frequently overlooked. While it is said that the infectivity of dust is short lived, it is also regarded as intense and it is only necessary to recall the enormous numbers of enteric organisms in the typhoid urine to appreciate this fact. (e) Other diseases of the infective intestinal type. Attention has been directed upon typhoid fever as the most important disease of this group, because it has been more thoroughly investigated, and better illustrates facts which are applicable to the next important diseases, namely, the paratyphoid group and dysentery; also, must be included that most dangerous of field epidemics—cholera.

In the present European conflict, the nations have drawn their forces from the scattered portions of the globe. All of these millions of men, suddenly withdrawn from the accustomed environments of peace, have been subjected to new modes of life, to a change in food, habitation, clothing and habit. They have been thrown into more or less intimate contact with other men who were infected with foreign diseases. The results of this new environment and exposure to new infections soon began to show itself in the hospitals. Typhoid fever appeared among the uninoculated French troops, and, it is said, that, at one time, they had no less than 30,000 cases; but this was soon controlled, and the disease is now a rarity since inoculation became obligatory.

Cholera broke out among the German troops in Galicia and the Rakitno marshes; but less than one-half of one per cent. of the troops had the disease, and of these only 10.2% died. This was because of the efficacy of the anti-cholera prophylactic. Among the uninoculated civilian population, the mortality rate was 50%. In both the military and the civil population the disease was controlled and finally eradicated.

OTHER DISEASES OF PRACTICAL INTEREST.

(1) Cerebro-spinal meningitis has occurred among troops at the front in the European War, and has caused considerable anxiety, partly on account of its high death rate (70%) in untreated cases, and from the fact that 40% of all contacts are said to be temporary carriers which may persist for about thirty days, on the average; in other cases, the germs may remain alive for several months; some persons carry them permanently. The prophylaxis consists in the prompt isolation of patients, with sufficient air space and ventilation, and all other measures tending to prevent contamination with the oral and nasal secretions.

Whenever this disease prevails, carriers are so numerous that it is generally impracticable to quarantine them; but, as far as possible, they should be detected and isolated, or, at least, kept under observation, and carefully instructed as to what to do and what to avoid.

Concerning the treatment, I need say little, except that the injection of the anti-meningitic serum of Flexner and Jobling has yielded excellent results in the Army. This serum has reduced the mortality from 73 to 25 per cent. in adults. Excellent results have also been reported from vaccination with meningo-bacterin, the reaction being very much like that observed after the use of typhoid vaccine. On the Texas border, there have been a few sporadic cases of meningitis, following which there are always a number of spurious cases which turn out to be hysteria in patients afflicted with a cold, or sore throat. On the Mexican border, when meningitis breaks out in a command, the men who occupy the same tent or are in intimate contact with the case, are promptly isolated, their temperature taken every day for two weeks, and a leucocyte count or a lumbar puncture are done on suspicious cases. The Hospital Corps men nursing these patients are vaccinated with the meningococcus vaccine.

(2) The typhus fever of Mexico (tarbardillo), the Rio Grande fever, and Brill's disease, have been shown to be identical with typhus fever. The immediate association of this dread disease, are famine, filth and vermin.

It seems now well established that the body louse, and, to a lesser extent, the head louse, are the usual communicating agents of typhus infection. The lack of bathing facilities in the trenches, and other means of ridding the troops of lice, permitted typhus to make large inroads in the early part of the European war; and famine conditions in Serbia permitted the disease there to reap a frightful harvest. The war is now on a more or less permanent basis, and the installation of the machinery of cleanliness has practically eradi-

cated this disease—except in Turkey, where it is now prevalent.

On the Mexican border, the following method is used in dealing with the vermin:

For body lice, the clothing should be removed and placed in boiling water for ten (10) minutes, or dipped in a mixture of vinegar and kerosene long enough for the mixture to soak into all the folds. Where so many suspects are being handled, their clothing and baggage are placed in an autoclave and kept there for fifteen minutes under not less than ninety pounds pressure; this kills both lice and eggs. Of course, every community may not have such an installation. It has been found that the mixture of vinegar and kerosene kills the vermin and the ovum. The kerosene kills the lice vermin and loosens the nits from the hair; while the hot vinegar destroys the ovum. Gasolene will loosen the nit from the hair, but does not destroy the ovum vitality.

For head lice, clip the hair and treat the head with the above mixture; after which, a shower bath of soap and water should be taken.

(3) Plague. Another vermin disease, carried by fleas.

(4) The exanthemata. It is said that, in the present European war, the commoner exanthemata have laid heavy toll upon contingents to whom they were new. Of this class, I will speak of measles. In the Army, it is responsible for more deaths than all the other eruptic fevers together. Under circumstances, when developed under conditions of want, hardship, exposure, and bad sanitation—and especially, when associated with a scorbutic taint—the disease may assume an extremely severe and fatal character. Formerly, the occurrence of the hemorrhagic form of measles was not infrequent among troops and was much dreaded. The exposure in the treatment of measles cases in tent hospitals, often unavoidable, does much to develop secondary bronchitis and pneumonia; and to these latter causes is to be attributed, also, much of the gravity which the disease has assumed when prevailing among troops during the existence of hostilities. During the Civil War, there were in the Union forces 75,177 cases, with 5,174 deaths; among the Confederate troops, Eve states that measles prevailed to such an extent that whole companies, batteries, and even regiments under organization, had to be disbanded and the men sent home. During the seige of Metz, measles was extremely prevalent and fatal in the garrison. The disease occurs far more frequently among recruits than old soldiers; the number of cases depending upon the proportion of susceptible individuals, and occurring particularly in country-bred recruits. In severe epidemics, the principal complications are broncho-pneumonia, pleurisy, empyema and otitis media. In camps, cases of measles should always be expected, watched for, and promptly isolated.

The measures to prevent the spread of this disease, consist chiefly in an early diagnosis, and the effective isolation of patients. It is desirable when possible, to separate cases with secondary infections from simple uncomplicated cases.

In an outbreak at a post or camp, every man who has not had the disease, should be required to report daily to a medical officer to be examined, especially for Koplick's spots, rise of temperature, coryza and cough.

(5) Next to tuberculosis, pneumonia is the most deadly of all diseases in the United States Army. Pneumonia and the respiratory affections attacked, in the present war, those dwellers of the tropics or subtropical countries, who were unused to cool climates; not all of the pneumonia, by any means, occurred in the troops from the tropics.

Sir William Osler, in discussing this question, said: "The allied arms in the west have been singularly free from camp diseases—no cholera, typhus, or malaria, and extraordinarily little enteric. Never before in history has so great a host been assembled; never before in war have armies been so healthy. The common civilian diseases have had their innings and have played relatively the most important role—cold and coughs, rheumatism in many forms, and mild fevers. When the mortality statistics of diseases are published from the Army of the West the best 'killer' will be found to have been the pneumococcus, the home-bred germ which the soldier takes with him or easily procures from a comrade. A short, sharp, honest disease, pneumonia either kills at short range or recovery is rapid or without sequelae."

Pneumonia has occurred in epidemic form among the troops on the Mexican border during this winter. Sleeping in conical tents which are heated with conical stoves, and where the ventilation is poor, is believed to be a contributing factor in the causation of pneumonia. These tents are either very hot or very cold; they become very hot at night and cool off in the early morning hours, subjecting the inmates to chilling. Their resistence is thereby lowered, rendering them more susceptible to respiratory diseases. When pneumonia occurs in epidemic form, the contacts should have their temperature taken daily, and be excused from drill for a few days. The tents should be well ventilated and sunned during the day. The men should be held in camp, and not permitted to attend moving picture shows, etc., until the danger has passed.

It is important to differentiate the different types of pneumonia by agglutination methods, provided good laboratory facilities are at hand. Pneumonia may be divided into four types:

Type I: Occurs in epidemic form and produces about one-third of all the cases; untreated cases yield a mortality of about 24%. This type responds well to serum treatment.

Type II: Also occurs in epidemic form, and furnishes about one-third of the cases; the mortality is about 60%; this form is not so amenable to the serum treatment.

Type III: Furnishes about 15% of the remaining one-third; the mortality of this type is about 60%; serum treatment is of no avail.

Type IV: Furnishes about 15% of the remaining third. This type includes the ordinary pneumonococcus, as found in the mouth; the mortality is under 20%.

The pneumonococcus is obtained from the blood

culture, or from the sputum; an immune serum is prepared, and the types of pneumococci are differentiated by agglutination methods.

MEASURES FOR DEALING WITH INFECTIOUS DISEASES IN WAR.

The measures for dealing with disease in war are as complex and varied as the diseases with which they are designed to deal; hence, they can only be taken up in a general way.

1. Indications of need for action: Two essential methods are necessary.

(a) The first, is an accurate diagnosis. This may present considerable difficulty in the field, and these difficulties have been enhanced by the growing tendency in practice to rely upon laboratory assistance to the detriment of direct clinical observation. Traveling motor-laboratories, however, provided for each army at the front, would offer great assistance in making accurate diagnoses.

(b) The second basis, is accurate statistical records of the prevalence of those diseases which call most urgently for remedial action. Upon the sanitary officer falls the duty of keeping the statistical records of preventable diseases, and maintaining close touch with the progress of the remedial measures for which they indicate the need.

2. Preventive measures. The preventive measures that are necessary in each disease, can only be indicated in a general way.

(a) The most important is the anti-typhoid vaccination, by which we have a method of protection against this disease which is quite as efficacious as is vaccination against smallpox. That the results of anti-typhoid inoculation have been entirely satisfactory is shown by the fact that, whereas, prior to 1910, there were, in the army, annually, in a strength of about 86,000 men, about 300 cases of typhoid fever, since 1910, there have been, in five years, thirty-two cases. During this time, there have been no great advances in military sanitation to account for this enormous decrease in the typhoid incidence. In the European armies, a polyvalent vaccine, containing bacillus typhosus, bacillus paratyphosus "A" and "B," and the bacillus of Asiatic cholera, is being used with good results. The report of the Surgeon General for 1915 shows that seven cases of typhoid fever (officers and enlisted men), occurred during the year in the army stationed in the United States. Four of these cases were in recently enlisted recruits who were in the prodromal stage of the disease. The history of several of these cases illustrates the failure to take early advantage of laboratory procedures in diagnosing obscure cases of continued fever. It is believed that the taking of the temperature prior to giving the first dose of vaccine, would detect these cases already in the prodromal stage of typhoid fever at the time of enlistment.

(b) Concerning preventive measures in typhus fever, it may be said that any knowledge of the mode of transmission of this disease, suggests the necessary prophylactic measures, namely, prevention of crowding, house sanitation, personal hygiene, proper bathing facilities, and methods of destruction of vermin and disinfection of clothing, etc.

REMEDIAL ACTION.

Next to preventive measures is the prompt detection of wastage in the fighting force and the removal of its cause. Here statistical returns are of importance. The diseases should be so classified as to indicate the presence of certain defects, namely, diseases of malnutrition, in relation to rations and cooking, and exposure diseases in relation to clothing. The acute infectious diseases are the most important, and demand the prompt isolation of the patient and equally prompt destruction of the infectious material by prompt disinfection.

(a) Isolation of infectious cases.

(b) Disinfection in the field by portable steam sterilizers, and other physical and chemical agents, are also to be considered.

The role of insects in war, the water problem, and the disposal of waste products are all important subjects which will engage the attention of the Army Sanitarian, and will often tax his ingenuity and knowledge of sanitation to the utmost in his effort to prevent and control transmissible diseases. The subject is too large in scope to more than touch upon in this paper.

The control of diseases in war depends entirely on an efficient sanitary service. Dr. Rucker, of the Public Health Service, states as follows on this subject: The duties of the sanitary service are varied, and include the installation and operation of every structure or appliance that appertains to sanitation in the field; the guarding of water supplies, and the careful treatment of those of doubtful origin; the testing of rations; the operation of bath-houses and laundries; the issue of parasite-free clothing and blankets; the cleansing and disinfection of houses; the destruction of garbage and manure, or other possible breeding places for flies; the cleanliness of camps; the isolation of patients suffering from infectious diseases; also, the contacts thereto, both in the military and the civilian population; the administration of typhoid and paratyphoid prophylactic; the search for carriers; the immediate investigation, with the help of the mobile and base pathological laboratories, of all outbreaks, whether among troops in the fighting zone, or those on the lines of communication, or elsewhere; and the maintenance of spot maps, charts and tables revealing the health history of every unit in the field. Gigantic lorries rapidly transport from place to place enormous disinfectors, each having a capacity of sixty cubic feet, thus permitting the rapid sterilization of the clothing of troops. Details of sanitary troops are engaged in draining mosquito-breeding swamps, while others lay out and build water filtration beds and sewage-disposal plants.

If I may be permitted to digress a little, I would like to say something about recent reports concerning mental disability in the present European conflict. The continuous strain of trench warfare has produced much neurasthenia and mental aberration, while the shock of heavy gun fire, where it has not produced death outright, has frequently brought about nervous conditions or actual

insanity. It has been known for some time that about one-fifth of all soldiers discharged are discharged on account of mental disability. Striking as is the prevalence of mental disease among soldiers and sailors in time of peace, it should be borne in mind that this is greatly increased during war. The intense emotional strain associated with warfare causes acute exacerbations of some of the milder psychotic and borderland cases which were able to get along unnoticed under the less stringent requirements of civil life. It has been found that cases of arrested dementia precox, neuroses and psycho-neuroses, cyclothymia, and high grade imbecility, have all been found among soldiers who have been mustered in without any suspicion that such conditions existed. Dr. Rucker informs us that when the European war is over, it will be mental disease rather than physical disease which will have been spread in Europe, out of which there is danger of their importation to the United States.

Let us hope that every medical man will show adequate interest in sanitation in war, and inform himself of the duties and responsibilities that may devolve upon him if he is ever called upon to play his part in the defense of his country.

SOME PROPERTIES AND ACTIONS OF TETHELIN, THE ACTIVE CONSTITUENT OF THE ANTERIOR LOBE OF THE PITUITARY BODY.*

By PROFESSOR T. BRAILSFORD ROBERTSON, Berkeley.

The process of growth obviously does not take place with uniform velocity throughout life. It is not at all unusual for an infant to grow, during the first months succeeding birth, at the rate of two pounds per month. Were this rate of growth maintained then at twenty years of age we would weigh in the neighborhood of five hundred pounds. Neither does the growth-process undergo a uniform retardation, diminishing in velocity by a uniform proportion per annum. On the contrary, as every pediatrician knows, the growth of children takes place in spurts, separated more or less distinctly from one another by periods of relatively languid growth. Such a resting period occurs towards the end of the first year of extra-uterine life and is succeeded by the relatively rapid growth of the 3rd, 4th, and 5th years. Another pause or slackening of growth succeeds this, to be followed by the energetic growth which accompanies adolescence.

The growth of man, therefore, consists of periods of rapid and slow growth which alternate with one another, and if we plot the growth in any dimension, for instance weight, on coordinate paper, so that weights are measured vertically and ages horizontally, we obtain a diagrammatic picture of the growth process which is not a straight line, nor even a single curvilinear sweep, like the outline of a parabola or of the logarithmic curve which represents the progress of the ordinary type of chemical reaction. On the contrary, our diagram reveals distinct waves or large oscillations in the growth-process and resembles, as a matter of fact, the diagram which you may obtain by superimposing three successive S-shaped curves upon one another in such a manner that their adjacent extremities merge into one another.

These waves or oscillations are not accidental, they are easily distinguishable from the relatively slight irregularities or fluctuations of growth which every individual child will display more or less frequently during its development. They are distinguishable from such accidental fluctuations because they occur at very nearly the same places in the growth-curve of every normal child and in the average growth-diagram constructed from the growth-data supplied by any large number of infants, these large oscillations or waves reveal themselves very distinctly, while the accidental and individual fluctuations cancel out and disappear in the average diagram because in the long run, if we take a sufficient number and variety of children into account, just as many of these accidental fluctuations will be positive (i. e., supernormal) as negative (i. e., subnormal). But the large fluctuations, which have a definite physiological significance, remain unaffected in magnitude and position and only appear more definitely in the diagram the greater the number of children we investigate.

These large oscillations or waves of growth I have termed "growth-cycles," and in the growth of man there are, as I have said, three such cycles superimposed upon one another. Each cycle begins with a period of relatively slow growth, followed by a period of very rapid growth and culminating with the termination of the cycle in a period of slackening growth again. In the case of the first two cycles this slackening of growth is followed by a fresh spurt or acceleration due to the succeeding cycle. In the case of the third or adolescent cycle of growth the period of slackened growth-velocity insensibly merges into the period of stationary development which we recognize as the adult condition. Sometimes, however, this stationary equilibrium is interrupted by a vigorous and abnormal growth, the growth of malignant tumors, which I am inclined to interpret as constituting the superposition of a fourth and physiologically abnormal cycle of growth upon the third and normally final cycle in the development of man.

Not only the growth of man, but also the growth of every mammal which has as yet been carefully investigated consists of three complete cycles of growth. The growth of the guinea-pig at first appeared to consist of only two difficultly distinguishable cycles, but the careful investigations of Read have shown that in this mammal the first growth-cycle is actually completed in utero, instead of being interrupted when half-completed by birth as it is in human beings, which perhaps accounts for the fact that, relatively speaking, guinea-pigs are born in a very advanced condition of physiological development and are able to "fend

* From the Department of Biochemistry and Pharmacology; Rudolph Spreckels Physiological Laboratory; University of California.

for themselves" within a very few days after birth.

These growth-cycles, so definitely situated in the curve of growth, and so invariable in their occurrence that they may be clearly recognized in the growth of mice no less than in the growth of man, must have some very definite physiological significance, and since growth is, in the long run, a chemical process resulting in the synthesis of living tissues from inanimate materials, these growth-cycles must have a chemical no less than a physiological significance.

We have, then, in each growth-cycle considered by itself, a chemical process which begins relatively slowly and increases progressively in velocity until it is about half completed and then slows off to its termination. The inquiry now immediately presents itself whether any chemical processes of this character are known to occur elsewhere than in the tissues of the growing animal?

As a matter of fact a number of chemical processes of just this character are known to the chemist. As examples we may cite the decomposition of cane-sugar by boiling (neutral) water, the decomposition of castor-oil in the pulverized seeds of the castor-oil bean, the decomposition of methyl acetate by (neutral) water, the oxidation or "tarnishing" of most metals, and the oxidation of a variety of organic materials. All of these diverse processes have this feature in common, namely, that one of the products of the chemical change which is going on has the property of accelerating or "catalysing" the further progress of the change. These processes, in a word, are "autocatalysed" or self-accelerating.

We have all been rendered familiar, during the past two decades of scientific thought, with the conception of "catalysors." The various digestive ferments will immediately be recalled to mind by medical men as instances of catalysors. The catalysors are substances which, when added to a chemical reaction, greatly accelerate it without being necessarily used up in the process. Thus a small concentration of acid enormously accelerates the decomposition of cane-sugar or of starch by boiling water, yet the acid can be recovered unaltered in amount or composition from the mixture after the reaction has been completed, and it may even be used over again to "invert" a fresh batch of cane-sugar. A minute quantity of pepsin or trypsin will enormously accelerate the decomposition of protein by water and the quantity of protein so decomposed may amount to five hundred thousand times the weight of pepsin employed to catalyse the process.

In the ordinary or "typical" cases of catalysis the catalysor is something foreign to the reaction itself, something which is added from without and does not constitute a part of the reacting substances or their products. In an autocatalysed reaction, on the contrary, one of the products of the process is also its catalysor, i. e., the reaction must proceed faster and faster as this product accumulates, until the exhaustion of the raw material or the "back-pressure" of accumulated products forces the process to slacken in speed and finally come to a stop.

The chemical processes which underlie the growth of animals are therefore processes of such a nature that they produce their own catalysors. But if this be so then we are immediately impelled to the conclusion that catalysors of growth exist, i. e., substances which, perhaps in minute proportion and certainly quite independently of their nutritive value, may profoundly modify the growth of living tissues. The question now arises whether any evidence other than evidence of this inferential kind exists of the existence of such catalysors of growth.

The profound significance of the various endocrine organs in the processes of growth will immediately suggest itself to the medical man as affording just the kind of evidence which we seek. We know from abundant chemical experience that disorders of the thyroid, thymus, and especially of the anterior lobe of the pituitary body, are reflected in a profoundly disturbed development of the various tissues of the body. We can hardly suppose that these organs are in reality digestive organs, so that the effects observed may be interpreted as effects of sub- or super-nutrition. The very nature of the effects themselves precludes such a supposition, for while inanition or overfeeding affect all tissues more or less in the same manner, the disorders of the endocrine organs referred to lead to extraordinary disproportion of development, one tissue or group of tissues displaying over-growth and yet another, perhaps, displaying equally marked deficiency of development.

It is among the active principles of certain endocrine organs, therefore, that we have to seek for the catalysors of growth the existence of which the nature of the growth-process itself has led us to infer.

Investigations upon both normal and pathological growth extending over a number of years, which have been conducted in my laboratory, have shown that several substances of slight or totally negligible *nutritive* value are capable, when administered to animals in unusual amount, of profoundly modifying the relative velocities of different types of growth. Such substances are, for example, lecithin, and cholesterol. Now one thing we have noted about these substances is that they are all either substances which are related to fats, or, at all events, substances which are invariably found in tissues associated with fats and sharing their characteristics of solubility in alcohol, ether, chloroform, etc. It thus appears distinctly possible that the various catalysors of growth are to be sought amongst the immense variety of fatty constituents of tissues, and we were especially encouraged in this idea by the recent notable experiments of Hopkins, Osborne and Mendel, McCollum and others, all of whom agree in affirming that normal growth is unattainable on a diet which is totally free from fatty constituents, no matter how great an abundance of other classes of foodstuffs may be supplied.

Pursuing these various lines of reasoning I accordingly took up some three years ago a rein-

vestigation of the influence of administration of the tissue of the anterior lobe of the pituitary body upon the growth of animals, choosing as my experimental material the white mouse. I found, as all my predecessors in this field, Aldrich, Schafer, Maxwell, Wulzen and others had found that the administration of anterior lobe tissue of the ox to young white mice at the beginning of the third (adolescent) growth-cycle resulted in marked retardation of growth. I also found, as Schafer and Wulzen had also previously observed, that at a later stage of growth this retarding effect was succeeded by decided acceleration of growth.

At the same time I undertook the attempt to isolate the active or growth-controlling constituent of the anterior lobe and, recollecting the fatty nature of the previously identified catalysors of growth, I sought for the active principle among the fatty constituents of the gland.

Among the alcohol-soluble constituents of the anterior lobe of the pituitary body I soon found one which was immediately distinguishable from all other fatty substances hitherto known by its remarkable composition and solubilities. This substance, which I have named Tethelin, is soluble in alcohol and in ether but is distinguished by the peculiarity of being almost totally insoluble in a certain definite mixture of the two. It is a fatty substance, since it yields soaps of fatty acids when decomposed by alkalies, yet it is soluble in water to the extent of about five per cent. It contains nitrogen and phosphorus just as lecithin does, but the proportion of these two elements is P : N = 1 : 4, instead of 1 : 1, as in lecithin. On decomposition by alkalies it yields a sweet crystalline substance which is not sugar but a substance superficially resembling sugar and representable by the same percentage-formula, namely Inosite or hexahydroxy-benzol. It is present in the glands in quite notable amounts, each gland yielding about ten milligrams of the dried substance.

Such a remarkable substance, present in such notable amounts in an endocrine organ, necessarily falls under suspicion of being the active principle of the gland or at all events closely related thereto. I accordingly undertook a series of experiments in which Tethelin was administered in dosages of 4 milligrammes per day to a large number of mice and their growth was compared with that of a large number of similar mice receiving normal diet and with that of the pituitary-fed mice to which reference has already been made.

The results of this experiment were perfectly definite and unequivocal. The effects of the administration of Tethelin were identical in kind with those obtained as a result of administering whole anterior lobe tissue, but since the dosage of Tethelin administered to the Tethelin-fed animals was large in comparison with that received by the pituitary-fed animals, the effects obtained with Tethelin were quantitatively much more marked than those obtained with fresh pituitary tissue. They consisted in the first place in marked retardation of growth in weight, succeeded by acceleration, but the retardation and acceleration were each so marked as to lead to a total distortion of the normal form of the growth diagram. These animals yielded a diagram which strongly suggested that one effect of the administration had been to enormously magnify and prolong the second growth-cycle and to delay and curtail the third. Recent very extensive experiments by Dr. Delprat in this laboratory upon the effects of Tethelin upon the growth of very young mice have lent encouragement to this view of the effects of administering Tethelin to older animals, for she has found that when Tethelin is administered to mice at the beginning of the second (two weeks of age) instead of the beginning of the third growth-cycle (five weeks of age) the growth of the young animals is accelerated instead of being, as in the older animals, retarded. Only with the onset of the third or sexual cycle of growth does the characteristic retardation occur and the growth which thereafter takes place appears to be, for some time at least, rather due to the continuation and magnification of the second than to the initiation of the third growth-cycle.

Evidently the growth of certain tissues or types of tissue is accelerated by Tethelin, that of other tissues or types of tissue being retarded, perhaps through the unequal favor extended to different tissues, through the operation of the Tethelin, in the competition for nutriment or possibly, on the other hand, to a specific retarding influence of Tethelin upon certain tissues, just as pronounced as its accelerative action upon other tissues. We are not yet in possession of sufficiently numerous or sufficiently definite facts to enable us to decide between these alternative possibilities.

Decisive as were the effects of administration of Tethelin upon the total growth of mice as expressed in weight, the effects upon their form and general appearance were much more marked. The animals which had received Tethelin were remarkably firm and solid or "stocky" in build. At the age of one year a normal male mouse has a loose and somewhat angular frame and outline, and his coat is beginning to lose the luster of youth and to become wiry, "starving" and discolored. The animals which had received Tethelin, on the contrary, had at the same age firm and rounded outlines and glossy, silky coats. We were continually surprised, in our weekly weighings of the animals, to find that animals which were relatively small in linear dimensions would weigh just as much as considerably longer normal animals of the same age. It was as if the body framework of the Tethelin-fed animals had "set" at an early age, so that the subsequent accretions of tissue had to be packed into a smaller space. Unfortunately time and opportunity have hitherto been lacking to undertake the investigation of the sequence of events in the epiphyses of the bones following administration of Tethelin to young animals. Such an investigation would yield very desirable information, but in any case the facts which I have recounted will serve to convince you, were that indeed necessary, that the picturesque fantasies concerning Tethelin with which aesthetes of the press have recently adorned their pages are

totally devoid of any foundation in fact, or, it may be added, in information supplied.

The superior development and nutrition of the skin consequent upon the administration of Tethelin is suggestively reminiscent of the hypertrichosis which is so familiar an accompaniment of hyperfunctioning of the pituitary body in man. It is furthermore of interest to note that Dr. Burnett and I have found that Tethelin, as also fresh anterior lobe tissue, also accelerate very decidedly the growth of another epithelial tissue, namely the Flexner-Jobling carcinoma in rats.

The fact that Tethelin accelerates the development of certain tissues and particularly the development of certain epithelial tissues, led me to entertain the hope that Tethelin might hasten the repair of wounds, and particularly of lesions involving a large loss of epithelial tissue. Experiments upon mice abundantly confirmed this supposition. Small pieces of skin were excised by means of a small instrument akin to a ticket-punch. Tethelin was administered hypodermically, at a point remote from the lesion, in relatively large doses (10 milligrammes) every third day. The results were very striking. At the end of three days in the control animals the cavities of the wounds were incompletely filled with granulation tissue; the area of the lesions was not contracted and the edges were in several instances inflamed. In the *treated* animals, on the contrary, all of the wounds were completely filled with granulation tissue, the area of the lesions had markedly contracted and no swelling was observed at the edges of any of the wounds.

At the end of six days in the control animals the cavities of the wounds were now completely filled with granulation tissue and the area of the lesions had begun to contract. In the treated animals, on the other hand, the granulation tissue had already and in every instance been completely replaced by white cicatricial tissue.

At the end of ten days the wounds in two out of ten control animals were still filled with granulation tissue, the granulation tissue having been replaced by scar tissue in the remainder. The condition of the wounds in the treated animals remained of course unaltered.

These preliminary results encouraged me to hope that this substance might prove of importance in military hospitals as a means of accelerating the repair of slowly healing wounds and thus not only alleviating a certain measure of suffering and some cases positive danger to life, but also, looking at the matter from the less important point of view of merely military expediency, by shortening the expensive period of residence of a certain percentage of cases in military hospitals and in some measure increasing the percentage of effectives available for return to active service, it appeared possible that this substance might prove to be of distinct and very immediate importance.

In attempting to accelerate the healing of wounds at least three very different types of treatment may be employed, each having its own important sphere of utility. The first and most generally applicable treatment is that which aims at procuring and maintaining asepsis in the injured and adjacent tissues. To this end the most effective efforts of surgeons have been chiefly directed and important results have been achieved in this direction in the course of the present war, conspicuous among which is the Carrel-Dakin method of irrigating wounds with fluids of which chlorine is the essential antiseptic principle. Infected wounds of the type most effectively treated by this and similar methods not uncommonly lead to trouble, not so much through delayed as through too rapid healing which encloses the infection and prevents access of disinfecting agents or the drainage which is essential to the health of adjacent tissues. After rigorous asepsis has finally been attained then rapid healing becomes a prime desideratum and the antiseptic solution hitherto employed is of little or no service in attaining this end, and in fact in some cases may actually contribute towards delaying its attainment.

A second method of approaching the problem is that of inducing hyperæmia and an abundant flow of lymph in the injured part, thus increasing the supply of nutrition to the regenerating tissues and also in some measure, possibly, assisting the attainment of asepsis through the promotion of phagocytosis. This type of treatment has been especially advocated by Sir Almroth Wright and has been employed with success in the treatment of casualties resulting from the present conflict.

The method of treatment which I propose is, however, totally different both in principle and application from either of the above. It does not aim at supplanting either of them but rather at supplementing them and assisting in the completion of the repair rendered possible or initiated by the methods now in use. The type of treatment which is contemplated in the use of Tethelin consists essentially in the local application of a specific catalyser of epithelial growth and the growth of bones; a substance, that is, which is effective not by virtue of attaining or assisting in the attainment of asepsis, nor by contributing to the nutrition of the injured tissues, but which by specifically accelerating the chemical processes which underly the growth and multiplication of the tissues concerned, improves and renders more rapid and effective the utilization of such nutritive materials as may chance to be available. It is obvious that this method of treatment may be utilized in conjunction with either or both of the methods now in use, and furthermore, that it is applicable to certain types of lesion in which healing is very greatly delayed despite the fact that the tissues affected may actually be aseptic.

During the past ten months a very considerable quantity of this material has been dispatched to Europe for trial in military hospitals. These clinical experiments are still proceeding and the surgeons who are conducting them are not yet ready to publish their findings. I am in receipt of reports which are not final and which when completed will in due time be published by those who have these investigations in charge. Without any breach of confidence I may, however, state that

results of a favorable character have attended the use of Tethelin for the purpose outlined, both in this country and in Europe.

Very careful investigations by Dr. C. L. A. Schmidt have shown that Tethelin is non-antigenic and does not sensitize to subsequent doses. It may therefore be repeatedly administered with impunity. It can be prepared aseptically and, when dry and packed in evacuated tubes, may be heated to 80° Centigrade without causing decomposition. When the tubes are opened, however, allowing access of air and moisture, the substance decomposes rather rapidly, and especially so if heated.

Tethelin is devoid of the action upon the uterus which is characteristic of posterior lobe extracts. Dr. C. L. A. Schmidt has recently shown, however, that if Tethelin be subjected for a brief period to the action of strong acids or alkalies it decomposes, setting free a substance which has the same actions upon the isolated uterus and upon blood pressure as an extract of the posterior lobe. This finding would appear to lend confirmation to the suspicion long held by anatomists that the posterior lobe derives its active principle from the decomposition of a material furnished by the anterior lobe, and Tethelin may very possibly play the dual part of the active principle of the anterior lobe and the raw material for the manufacture of the active principle of the posterior lobe.

It has recently been shown by Motzfeldt [1] that Tethelin exerts an action in checking artificially induced polyuria, identical with that which is exerted by whole anterior lobe extracts.

Original Articles

UROLOGICAL PROBLEMS.*

The Chairman's Address.

By VICTOR G. VECKI, M. D., San Francisco.

There was a time, and not so very long ago, when urology was considered to be a parvenu amongst the medical specialties. This time, however, is gone for good, and our specialty is occupying its proper place definitely. Some of our shining lights seem to think that the receiving of urology into polite medical society circles was simply due to the circumstance that the original genito-urinary surgeon became a urologist, and the kidney, the ureters and the bladder were given all the prominence while the genitalia proper, their contagious and other pathological conditions were ignored or at least soft-pedaled.

Some of the men who lived a long time ago will easily remember the time when the armamentarium of the most prominent physicians consisted of pen and ink, their library of a few musty old books, and when the surgeon and the obstetrician were considered menials. With the advent of antisepsis and asepsis, however, the medical world was brought to worship at the shrine of the great surgeons who were competent to perform a laparotomy. But the great surgeons began to multiply with appalling rapidity until "everybody was doing it." Frequently the surgeon was separated from the operator, consequently surgical technique detached from surgical diagnostic and sound judgment. And medical science kept on advancing with gigantic strides until at present even the wisest hardly can claim to know it all. New specialties become necessary, and the evolution of medical practice undoubtedly must lead to group study and group diagnostic for all complicated cases. And who can always tell which case is simple and which one is complicated? Surely not the man who directly from college steps into some convenient specialty. Any carpenter can build a log cabin, but for the erection of a modern building an able and experienced architect is needed, and surely each diagnostic group of various specialists must be guided and directed by a real and true physician.

The rapid progress in the conception and the understanding of the pathology and therapy of the various genito-urinary conditions on one hand, and somewhat the desire of some people to take it easy and to be satisfied with what they really can do, and sometimes only think to be able to do, gradually leads to specializing in the specialty itself.

The genito-urinary surgeon cut loose from the dermatologist almost 25 years ago; recently the syphilologist is being dropped, the genitalist is just tolerated, and the venereologist can obtain a hearing only when the treatment he advocates consists of a heroic, if not emasculating surgical operation.

The ardent desire to appear respectable threatened at one time to establish a class of ostensible and specious specializers in the ranks of urologists. At first they were greatly admired because they were able to perform admirable artistic feats in very rare pathologic conditions; on closer examination, however, they lost most of their luster, because they and their pupils were sorely defective when confronted with the commonest every day urological ailments.

We must come to the conclusion that urology has reached a stage of development where pretentiousness is not necessary and, as usual, does not help; that urology also has reached a stage of development, creating conditions under which only a man of profound knowledge of medicine in general can make proper use of special urological training.

We may emphasize once more that urology being fully accepted and recognized, that the modern urologist is justified in avoiding the lure of snobbish ostentation, and may, without any fear or apprehension as to his standing, settle down to every-day usefulness and common sense.

Were we to judge by recent urological publications we would be led to believe that man's sexual capacity is of little importance, and it also may seem that sexual vigor is less in demand. Careful examination in every single case, however, will convince us quickly that it only seems

[1] K. Motzfeldt. Journ. Exper. Med. 25 (1917), p. 153.

* Read before the Urological Section of the California State Medical Society at San Diego, April 17th, 1917.

to be so, and, that in reality, and in spite of all the displayed puritanism, no change took place in that respect since the time it is said Adam and Eve lost the paradise.

The physicians and surgeons have a sort of *jus gladii* and to a certain extent absolute right over death and life. Not only criminal carelessness, but also a slight mistake, an error in judgment, may imperil or end a patient's life. The modern physician is fully conscious of his responsibility, and practices the *"non nocere"* most conscientiously. The genito-urinary surgeon is confronted frequently with conditions in which carelessness, a mistake, an error in judgment, may imperil or destroy a patient's sexual power, and the principle of the *"non nocere"* surely ought to reign supreme.

The training of every genito-urinary surgeon ought to be such that he be always in the position to give the benefit of the doubt to whom and where it belongs.

Knowledge and experience engender doubt. "When you doubt, abstain," was Zoroaster's teaching. "If you are in doubt," said Talleyrand, "whether to write a letter or not—don't." Bulwer thought that this advice applies to many doubts in life besides that of letter-writing. Surely every one must acknowledge that it applies most urgently when we are in doubt in regard to the indication of any operation that jeopardizes a man's sexual capacity. The golden rule, if observed at all, would compel the surgeon to ask himself: Would I, if afflicted as this patient is, demand or even suffer such an operation? The layman-patient's wishes, his desperate impatience, should never be taken into consideration, and if there is the slightest doubt, the benefit of this doubt must be given to the patient.

When the genito-urinary surgeon is consulted by a candidate for marriage, and there is cause for even so slight a doubt, the benefit of this doubt must invariably be given to the future wife.

When we are confronted by any initial lesion arousing the slightest doubt that it might be syphilitic, without hesitation the patient must be given the benefit of a full dose of Salvarsan. This therapeutic measure will immediately serve as a diagnostic measure, may save the patient a great deal of misery, can never do any harm, and blood examinations will clear up any doubt that may arise in the future.

There are only two conditions in which the genito-urinary surgeon is fully justified in giving the benefit of the doubt to himself; the one is when there is any doubt in regard to the fee, and the other when the promoter, glib of tongue, approaches with some proposition of brilliant investment.

While it is necessary and exceedingly useful to study and make clear even the rarest pathological conditions of the genito-urinary tract, it must not be forgotten that there are many other problems of great importance to which so far our special fraternity has given but scant attention. There seems to be a trend to continue on outlined paths, and to keep on to swear by the *verba magistri;* life seems to be too short to bother with some momentous, but intricate questions. Freudian teachings for instance,—we must acknowledge, a hard nut to crack,—are mostly ignored, misinterpreted and seldom properly understood; psychotherapy with its enormous possibilities hardly gets any attention, and it is almost incredible how little consideration is given to endocrinology and organotherapy.

Until recently organotherapy was conducted on empirical lines; fake manufacturers and quacks have brought it into disrepute, but organotherapy is being rapidly redeemed and re-established in the esteem of the medical profession, by careful endocrinologic studies.

The genito-urinary surgeon is the least able to afford to ignore the advantages to be gained and the possibilities in store.

Many and many a case of so-called sexual neurasthenia which refuses to be influenced by prolonged, useless and frequently senseless local treatments, will yield most rapidly to a judicious use of thyroid or pituitary preparations. If any one, however, armed only with the knowledge gathered from the manufacturers' literature, begins to prescribe some kind of tablet to be taken three times a day he must not expect much, and though the patient may deserve sympathy, the physician is hardly entitled to any success.

Careful discrimination in regard to the preparation itself, in regard to the various indications and in regard to dosage are the indispensable conditions of success.

On the hand of the few positive facts, which have been established so far, we know that thyroid medication is frequently indicated in enuresis; we know that enuresis and sexual under-development and sexual weakness are mostly going hand in hand, that thyroid insufficiency and sexual vigor never go together. We know that the use of the extract of the posterior lobe of the pituitary gland increases diuresis and raises blood-pressure by vasoconstriction. We know that even partial removal of the anterior lobe causes obesity, polyuria, glycosuria and greatly impairs the sexual function. Experiments on animals have shown that the anterior lobe is responsible for the growth and rapid sexual development; experimenters at the Johns Hopkins Hospital came to the conclusion that the posterior lobe principle is exceedingly toxic while the anterior lobe principle is tolerated quite well by experimental animals. We know also that the adrenals have a stimulating influence upon the sexual glands.

Experience teaches us that glandular insufficiency is sometimes responsible for aggravated cases of anemia and the intractability of cases of syphilis.

In view of all these facts we surely have a right to advise the genito-urinary surgeon to pay more attention to organotherapy. If results are to be obtained the patient must be carefully watched, the dosage depending to a great extent upon the weight and the influence the remedy has upon the blood-pressure. It is easier to treat intelligent patients because they can co-operate by

observing effects and results, though it is always necessary to guard against suggestion.

There is an unlimited array of important questions to answer and perplexing problems to solve in organotherapy based on properly studied endocrinology. We must ask ourselves why so little consideration is given to the immense possibilities of Lydston's trasplantation of sexual glands. Here surely we have a procedure that is worthy of the best efforts of the best amongst the genito-urinary surgeons.

The contributions of urology to the advancement of medicine in the direction of becoming an absolutely exact science are enormous; but much is asked of the one who gives much, and therefore the modern genito-urinary specialist must broaden his field, consider everything worthy of consideration, thus avoid one-sidedness and shun a snobbish ignoring of the most vital question in human life.

SURGICAL TREATMENT OF SEMINAL-VESICULITIS.*

By ARTHUR B. CECIL, A. B., M. D., Los Angeles.

The part played by the seminal vesicles as a seat of chronic infection has until recently practically escaped the attention of the surgical world and it is only now that urologists are in the midst of solving, not only the pathology, but even the physiology of these organs.

Considering the very great frequency of gonorrhœa and the recognized high percentage of cases of prostatitis and epididymitis attending gonorrhœa, seminalvesiculitis must be of very frequent occurrence. It is almost inconceivable that epididymitis could occur without an attending seminalvesiculitis, likewise that the prostatic ducts should be invaded and the ejaculatory ducts leading to the seminal vesicles escape. That seminalvesiculitis is a very common disease one need only satisfy oneself by thorough routine urological examination. A large majority of the cases attending or following gonorrhœa probably spontaneously recover or produce no symptoms, but everyone is familiar with the type of case which does not recover and who for years presents a host of symptoms resisting every type of treatment. In fact, treatment in some cases seems only to make matters worse and it is conceivable that massage of a walled-off inflamed vesicle, with no outlet for drainage, might indeed aggravate the condition so that these cases should not be too quickly relegated to the group of neurasthenics. It is in this type that surgical treatment must be considered.

The anatomy of the seminal vesicles has been recently investigated by Picker and by Thomas and Pancoast. The formation of these organs is found to be extremely variable and complicated. Attempts have been made to classify them but classification seems only to bring to mind the complexity of their formation. They have been grouped as: (1) Simple straight tubes; (2) thick twisted tubes with or without diverticula; (3) thin twisted tubes with or without diverticula; (4) main tube straight or twisted with larger grape-like arranged diverticula; (5) short main tube with large irregular ramified branches; (6) miscellaneous, comprising (a) embryological abnormalities and (b) pathological conditions.

The capacity of the seminal vesicles varies from three to eleven and a half cubic centimeters and they measure in length from six to twenty-three centimeters. Thus it is seen that the seminal vesicles possess a most extensive secretory surface, are frequently exposed to infection and yet when infected, from their very formation, present an extremely poor possibility for drainage. It is possibly true that the various diverticula and branches of the seminal vesicle ramification can be singly closed off so that parts of the seminal vesicles may be filled with pus walled off and yet a very considerable portion be left more or less unaffected.

While gonorrhoea plays an undoubted large part in the original infection of the seminal vesicles and may in many cases persist as a source of danger of extending gonorrhoeal infection, it is also true that perhaps the gonococcus is in a great majority of cases subplanted by other bacteria. In the cases of chronic seminalvesiculitis persisting for years the offending organisms are most frequently the staphylococcus, the streptoccoccus and the colon bacillus.

The bacteriology of the seminal vesicles has not been well determined for the reason that practically the only way of determining this is by examination of the secretion obtained at operation and as yet nothing has been published on this work. It is evident that secretions obtained by massage of the seminal vesicles is practically always contaminated by bacteria from the urethra and even could this possibility of contamination be ruled out it would be almost impossible to rule out the possibility of contamination from the often attending chronic prostatitis. The study of the seminal vesicles after death, such as was recently undertaken by Thomas, was not conclusive because of the known frequency of post-mortem infection. In the future it is my purpose to make cultures at the time of operation in all seminalvesiculotomy and seminalvesiculectomy cases. There is another point, however, in this connection and that is that while a large majority of cases of seminalvesiculitis are probably secondary to a Neisserian infection the gonococcus is not necessarily the primary source of all cases of seminalvesiculitis for as is well known chronic prostatitis is by no means always secondary to a gonorrhoeal infection.

The symptomatology of seminalvesiculitis is many times obscured by the often attending chronic prostatitis, but there are groups of cases which I believe to be sufficiently well defined to allow of a definite classification. First there is a group, not large to be sure, but of vast importance on account of the suffering produced, in which there are recurrent attacks of cystitis directly dependent upon a chronic inflammation of the seminal vesicles. As a cause of chronic cystitis in men so far as I know the seminal vesicles have rarely

* Read before the Southern California Medical Society, Redlands, California, May 3, 1917.

if ever been seriously considered, and yet from the study of my cases I am thoroughly convinced that there are cases of persistent cystitis which are directly dependent upon the seminal vesicles and which continue to persist until treatment is directed toward these organs. So that in men presenting chronic cystitis it is not alone sufficient to rule out the question of infection of the kidneys and the cases of mechanical obstruction and intravesical causes, but it is also necessary to thoroughly investigate the seminal vesicles. While the seminal vesicles have long been regarded by many as capable of bringing about many disturbances of urination they have practically not been considered as a source of chronic cystitis.

The first case of this kind that I observed was in July, 1914. A man aged thirty-six was admitted complaining of attacks of burning urination lasting for about a week at a time and recurring about every five weeks extending over a long period of time. The previous history of this case is of great interest. Sixteen years before admission he had had gonorrhoea which lasted for two months and then apparently entirely cleared up. Four years later he had another attack of gonorrhoea in which the discharge persisted for two years. Following this he had twelve recurrences of gonorrhoea; the last attack was two years before admission. Now for a year and a half there had been recurrent attacks of frequent burning urination. In brief, examination showed a urethral discharge containing many pus cells but no intracellular diplococci. The urine showed an enormous number of colon bacilli and many pus cells. The left globus major of the epididymis was slightly indurated. The prostate was generally indurated to a moderate degree and near the upper right border was an area of induration about one centimeter in diameter. A note made at that time stated that the striking thing about the rectal examination was the great thickening and engorgement of the seminal vesicles so that they stood out like the distended fingers of a glove. The secretion obtained by massage of the seminal vesicles was practically all pus. The bladder was studied in great detail for the question of contracture of the vesical neck for intravesical causes of cystitis. No cause for the persistent cystitis was found in the bladder nor in the urethra. The kidneys were studied and found to be normal in every respect. I was forced to the conclusion that the recurrent attacks of cystitis in this case were secondary to the inflammation in the seminal vesicles. The seminal vesicles were massaged every other day for a period of about eight weeks and although this has now been almost three years no attacks of cystitis have occurred. I might say that the urine very quickly became clear and has remained clear.

Case II. A man fifty years old was referred to me by Dr. Braasch, of the Mayo Clinic, on August 29, 1916. This patient complained of burning across the front of the bladder, burning between the legs and spells of very marked frequent burning urination. His first trouble began nine years before admission with pain which seemed to be in the right side of the bladder deep in. This pain was aggravated when the bladder was full. At times there would be attacks of frequent urination and then there would be intervals of a month or so when he would feel perfectly well. There was no history of venereal disease. Three years before admission he began treatment and kept it up almost continuously in various ways. The seminal vesicles were massaged, the bladder was treated by installations, the posterior urethra was fulgurated and various procedures were carried out. Two years before admission he went to the Mayo Clinic. Dr. Braasch found the kidneys normal, no intravesical cause for his cystitis. My examination, which included a thorough urological study, confirmed the findings previously made out by Dr. Braasch, no intravesical cause for the cystitis, negative findings from the kidneys. He was treated by me in various ways for several months but the bladder condition continued about the same. Exposure of the seminal vesicles, on April 4, 1917, showed almost practical obliteration of the left seminal vesicle by scar tissue and on the right side the seminal vesicle was embedded in a very marked perivesicular infiltration.

There are other cases of this type which I could report but I will not take up your time with case reports. I think it is only necessary to again emphasize that in men the seminal vesicles must be considered as an etiological factor in a persistent chronic cystitis. As to whether the infection of the bladder is brought about by an extension from infection of the posterior urethra or directly through the vesical wall from the seminal vesicles or as to whether the inflamed seminal vesicles only render the bladder susceptible to bacterial invasion independent of direct infection I am not prepared to say, but in as much as the normal bladder is difficult to infect with bacteria I am rather inclined to believe that the close lying inflammation of the seminal vesicles in lowering bladder resistance is of great importance.

The effect of seminalvesiculitis on the sexual function is not clear. It is not even definitely settled that the seminal vesicles are receptacles for the testicular secretion. Thomas and Harrison, of Philadelphia, in their study of post-mortem cases came to the conclusion that the seminal vesicles probably did store up spermatozoa during life, but were not convinced of this. Spermatozoa were found in many cases at death. Besides acting as reservoirs for the spermatozoa, which they probably do, the seminal vesicles elaborate a specific albuminous secretion which belongs to the group of histones. The function of this secretion is not known.

It is probable that inflammations of the seminal vesicles have to be considered in the question of sterility. When it comes to the consideration of the sexual function in the sense of sexual power and sexual desire the whole physiology of this function is so obscure that nothing definite is known as to the part played by the seminal vesicles. Impotency has apparently followed operations on the seminal vesicles but how often is not known. It is very difficult in this connection to rule out physical impressions. The pain symptoms of seminalvesiculitis are very variable and at times

the most distressing of any. There are undoubtedly cases in which men suffer for years with the most excruciating persistent pains in the back and in the perineum which are directly attributable to inflammation of the seminal vesicles.

In regard to the role played by the seminal vesicles in systemic infection there can be no doubt. Aside from the cases of gonorrhoeal arthritis which are almost undoubtedly in many instances kept up by a persistent seminalvesiculitis there are various other types of chronic arthritis and deteriorating changes in the general health, cardio vascular, etc., which are dependent upon a chronic persistent inflammation here located.

Chronic inflammation of the seminal vesicles has been attacked surgically by four different methods, namely: Vasopuncture, with spermatocystic medication, vasostomy with drainage of the vesicles through the vas, vesiculectomy and vesiculotomy. Vasopuncture, that is, to pick up the vas in the groin and to inject the vesicles and ampulla of the vas through it has proven to be of quite considerable value. It has the advantage of being extremely simple to carry out. The various preparations of silver have been used. Collargol ten per cent., protorgol one-half to one per cent., silver nitrate one to two per cent., silver iodid emulsion five per cent., etc. This method of treatment has been used by Belfield rather extensively and more recently by Thomas, Caulk and others. Its limitations are evident. In the first place, it is evidently of no value if the vas is occluded. It is questionable as to whether it should be used if the ejaculatory duct is occluded and must necessarily fail in cases in which infection is walled off in a part of the seminal vesicle or is located in a walled-off diverticulum of either the ampulla of the vas or the seminal vesicle. It has never seemed to me that vasostomy, that is drainage of the seminal vesicle through the vas, could prove very efficient and the same objections are offered against this procedure, that is, it must be worthless if the vas is occluded nor can it be of any value in bringing about drainage of a walled off inflammatory mass in the seminal vesicles. As to whether the vas is or is not occluded, or as to whether various areas of the seminal vesicles are walled off or not a fair amount can be determined by injecting the seminal vesicles through the vas and making a skyograph. In cases of seminalvesiculitis which seem to persist in spite of massage it is of very great diagnostic value for it is evident that if the ejaculatory duct is occluded on one side or both massage of the seminal vesicles must be worse than useless. Very little has been done in the way of catheterization of the ejaculatory ducts.

A more important consideration has recently come up in the surgery of the seminal vesicles, namely, the comparative value of seminalvesiculotomy and seminalvesiculectomy in chronic seminalvesiculitis. While undoubtedly seminalvesiculotomy has value as a surgical procedure it is very doubtful as to whether it is any more conservative than seminalvesiculectomy so far as preserving the seminal vesicles is concerned, and if the seminal vesicles are preserved it is probable that the infection is not cured. I am inclined to believe, that of the more extensive operative procedures that are undertaken on the seminal vesicles, that seminalvesiculectomy is the operation of choice. These operations have been condemned as being very extensive and as being extremely difficult. They are not by any means difficult and as I have said before should not be undertaken except in a case where the seminal vesicles are very definitely at fault and perhaps have already practically been destroyed by inflammation or the general health has suffered a very great deal by their presence.

In the exposing the seminal vesicles I have followed Young's technique, which is very little different from the tenchique first described by Young for exposing the prostate. This method of exposure is now almost universally employed in seminalvesiculectomy and seminalvesiculotomy except for a few minor variations which have been devised for bringing the prostate and seminal vesicles down. Thus instead of Young's tractor, which does no injury to the prostate or seminal vesicles, other operators have employed a suture through the prostate and base of the bladder as a method of traction, while still others have used an instrument of fork-like arrangement. Neither of these methods gives an exposure which is as satisfactory as one can obtain by Young's tractor, and they have the objection of tearing the prostate. It is also a very great satisfaction to be able to palpate on the instrument in the bladder and to be able to rotate first one seminal vesicle into view and then the other when Young's tractor is used.

The position of the patient on the table is very important. It is necessary to have a very marked exaggerated lithotomy position so that the buttocks are almost parallel with the floor. Young has long insisted upon this position as a requisite to a proper entrance to the perineum. A sound is passed into the bladder after the patient has been cleaned up and held by an assistant. An inverted V-shaped incision is made in the perineum through the skin and subcutaneous fat. The position of this incision is so that its apex is about an inch and a quarter in front of the anus and the limbs of the incision extend out a little median to the ischial tuberosities. The finger is passed down by blunt dissection on each side of the central tendon into a natural fossa which lies back of the triangular ligament and between the transversus perinei muscles and the levator ani. The central tendon is now divided just back of the bulb and the recto-urethralis muscle is cut, allowing the rectum to drop back. This brings one right to the apex of the prostate. By using the back of the knife handle and working always on the membranous urethra and prostate the fascia of Denonvillier can be brought into view as a glistening membrane. When this has been exposed the sound is removed from the urethra. Young's seminal vesicle tractor is passed into the bladder and opened. Traction is then made downward and forward by this tractor. One is astonished how far anteriorly the prostate is immediately brought. If the right line

of cleavage has been located, that is, the line of cleavage between the two layers of the fascia of Denonvillier, the rectum strips back with the greatest of ease and the seminal vesicles are very quickly brought into view. I wish to state here that the vesicles are by no means in a dark field and when properly exposed should be almost on a level with the skin surface of the perineum. This is accomplished without any undue tension on the tractor. The fascia of Denonvillier is now opened on each side just over the seminal vesicles and they can either be opened up and cauterized with carbolic acid or can be picked up at their tips and easily removed. It should be remembered, however, that the ampulla of the vas presents small diverticula not far different from the diverticula of the seminal vesicles, and it is believed that in practically every case, whether the seminal vesicles are removed or not, the ampulla of the vas should be drained.

Bleeding following seminal vesiculectomy is only very slight and the shock of the operation so little as to be astonishing. As a rule the wound should be healed thoroughly within two weeks.

Some operators advise the insertion of a rubber tube into the rectum after the operation has been completed and the use of opium pills to prevent the bowels from moving for four or five days. From my experience with Young's perineal prostatectomy and with a limited number of seminal vesiculectomies I am thoroughly convinced that the rectal plug only causes discomfort to the patient and is more likely to produce a rectal fistula than not and should not be used. It has been our custom to give castor oil on the second day, as it adds a good deal to the post-operative comfort and convalescence.

The operation of seminal vesiculectomy is extremely simple but should not be undertaken unless one is thoroughly familiar with the technique of Young's perineal prostatectomy and with the anatomy of the perineum.

MONGOLISM.*

By RACHEL L. ASH, M. D., San Francisco.

The term *Mongolism* denotes a congenital state of mental deficiency, whose most marked characteristics are certain resemblances to the Mongol race.

The first definite description of this condition was given by Langdon-Down, in 1856; Shuttleworth added many important observations; while Telford-Smith, in 1895, developed mongolian imbecility into a clinical entity.

Mongolian imbeciles are found in all countries, and form from 3 to 5 per cent. of the feeble-minded in institutions. As the great majority of mongols die in early childhood, the actual number must be much greater, the institutional statistics representing merely the survivors.

PATHOLOGICAL ANATOMY.

The result of autopsies has been disappointing; more knowledge has been obtained by clinical study.

The Head. The head is distinctly microbrachycephalic; the circumference is small; the vertex, low; the antero-posterior diameter is less than the transverse. Occasionally the shape is complicated by rickets, hydrocephalus, etc. The perpendicular frontal bone is parallel to the occiput. Usually the malar bones are prominent. The base of the skull is small; the pharyngeal vault is low and narrow, and the nasal cavities are diminished in size.

The Long Bones. The long bones show nothing characteristic except that they do not grow to the length of these bones in normal individuals. This accounts for the dwarfism of this type.

The Hand. The hand is the most remarkable feature of the mongol skeleton. The metacarpus is small; the metacarpal fingers are short and thick, but tapering toward the extremities. The thumb and little finger are very short. The little finger is incurved toward its neighbor, its tip seldom reaches to the middle of the second phalanx. It is known as the Telford-Smith finger. The X-ray shows a very small second phalanx, frequently with a change in the size and shape of the distal phalanx. The time of ossification is normal; occasionally, it may be premature.

The Brain. Much time has been consecrated to the study of the brain, but the results of all investigations may be summed up thus, to quote from Vogt: "While many cases reveal normal findings, in the majority of the cases are seen: lack of development of entire cerebral lobes, or portions of these, such as single convolutions, abnormal smallness of single lobes, the pons, the medulla, the cerebellum, and, lastly, delayed, undeveloped cerebral gray and white matter. All these point to an impeded progress in the last stage of foetal development."

Many changes have been observed in the ear, heart, and intestines, but these are common in other defectives and do not deserve special mention here.

No constant variation from the normal has been found in the anatomical study of the ductless glands.

CLINICAL FEATURES.

The appearance of the mongol is typical. The main features are noticeable at birth,—the small head, the slant eyes, the saddle nose, the thick, protruding tongue; the child nurses with difficulty. As he grows older, other characteristics make their appearance. Very characteristic is the lack of tone of the muscles, permitting the child to assume many unusual and normally impossible positions with its limbs. The hands with the short thickened fingers, the protruberent abdomen, the inability of the child to sit up, the late appearance of the teeth, the sucking tongue, the absent speech, and the lack of interest in its surroundings early call the attention of the mother to an unusual

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condition in her offspring. Since the capacity for inspired and expired air is diminished, the respirations are shallower and more frequent than normal. The area of mucous membrane is diminished, and, aided by the protruded tongue, it becomes insensitive; consequently, infections are frequent. Chronic coryza, bronchitis and blepharitis are the rule.

The hair is usually sparse and is always straight. There is no constant peculiarity in the shape of the ears. The face is striking. It is round and often flat; the cheeks are inclined to be chubby and are often flushed. The forehead is usually of good shape and is not as wrinkled as that of the cretin. The nose is short and flat; the bridge, broad and sunken; the overlying skin is lax and frequently extends over the eyes for some distance as epicanthic folds, thus giving an appearance of increased distance between the eyes. The eyes appear small owing to the narrowness of the palpebral fissure, which is still further characterized by an oblique slant which originally suggested the name *mongolism*. The mouth is small, and is usually kept open to protrude the large, coarse, dry and fissured tongue.

The skin is generally rough and dry, thickened and mottled. The forehead, cheeks, neck and back of hand often suggest myxoedema.

Secondary sexual characteristics develop late. Frequently the testes are undescended and the menses much delayed. Pregnancy in a mongol is unknown, although other classes of low-grade defectives have borne children.

The haemoglobin is normal, and the cellular elements present nothing unusual. The blood pressure is generally 50 to 80 mm., below the average for the age. Extensive work has been done on the metabolism of mongols. The sugar tolerance is high; the Ca and P output in the urine and faeces is much increased.

The mongol is always undersized. Even if at birth the child is of normal weight and length, after the third year the rate of growth diminishes. At ten years of age he is 2½ to 4½ inches shorter than normal. As is to be expected from the lack of tonicity of the muscles, the child balances himself with difficulty and begins to walk very late, as a rule between the third and fourth year.

In the nervous system, aside from a diminished sensation to external stimuli, heat and cold, touch and pain (very common in defectives), there is nothing of special interest. The tendon reflexes are present.

Fig. 1.
Mongolian Idiot; aet. four years. Note typical hands.

Fig. 2.
Cretin; aet. four years.

MENTALITY.

As the child grows older, his lack of mentality becomes more and more apparent. What in early childhood was thought to be obedience, is really an indifference to surroundings. With locomotion, the real character of the child becomes evident. Sometimes there are uncontrollable fits of anger, though as a rule the mongol imbecile is of a happy disposition. He is an excellent imitator and is even able to dance in time to music. The mentality, according to authorities, rarely reaches the sixth year, and is never beyond the eighth year, so that he is usually classed as a low-grade imbecile.

Speech is learned very late, and it is rare to hear fully developed sentences, even at mature age.

DIAGNOSIS.

The diagnosis of mongolism is easily made. Some difficulty may arise, however, in differentiating it from *cretinism*, and, in early life, from those diseases in which locomotion is delayed—rachitis, amyotonia congenita, and achondroplasia.

Cretinism. The characteristic appearance of the cretin is due to an absence or lack of function of the thyroid. His skin is myxoedematous. His skull is large; the frontal bosses, prominent and the occiput, conspicuous. The long bones are thick and short, the appearance of the centers of ossification exceedingly delayed. The hand is usually small and immature, the thumb and little finger are normal, but the last phalanges of all the fingers are short and broad. The malar bones are normal as are usually the eyes. There is no sad-

dle nose. The face is thick, pale, and with few lines of facial expression. The cretin is stupid, obstinate and bad-tempered. With him the thyroid therapy brings about happy results. His idiocy may be of extreme grade.

Rachitis. The broad head, the softness of the bony structures with consequent deformity, the changes in the epiphyses, and the unclouded mind serve to distinguish this condition.

Amyotonia congenita. There is the same hypermobility here as in mongolism, but the facies are of a different type, the tendon reflexes are absent and the mentality is normal for the age of the child.

Achondroplasia. Confusion will arise only in the first months of life; the characteristic large head, the long body, the short limbs, the trident hand with the blunted fingers are noticeable before the first year.

Fig. 3.
Radiogram of hand of Mongolian imbecile, age seven years. Note the Telford-Smith finger, and a typical ossification of the second phalanx of the index finger.

PROGNOSIS.

Mongols do not live very long. Forty years is a very unusual age, and the majority die in early childhood. More than 50 per cent. die of some infection of the respiratory tract; tuberculosis or pneumonia are the most frequent.

PATHOGENESIS.

Syphilis, tuberculosis, and alcoholism of the parent occur no more frequently in mongols than in other defectives.

From the figures given by different observers, it would seem that more than half of the mongols are the last-born children often of large families where the offspring have come in rapid succession; that one or both parents are in or beyond the third decade; and that the mother has been weakened by physical or mental strain. It may be added that, in some cases, the mothers are very young; here the reproductive powers may not yet be fully established. Which of these conditions is the most potent is yet in doubt. Probably all act concurrently in many cases. Mongolism is an exhaustion product, the result of two factors, morbid heredity and weakness of the parent.

Fig. 4.
Radiogram of hand of Cretin, showing delayed ossification.

In a large number of cases the mother gives a history of menstrual disturbances, uterine displacements and pelvic operations, all antedating pregnancy. Is it not possible that some dysfunction of the internal secretion of the ovary and the related endocrine organs, analogous to an osteomalacia, may play an important part in the production of mongolism?

Jodicke and Dolega, in their study of metabolism in this disease, have found an increased combustion of sugar. This they believe is due to a hyperfunction of the pancreas, consequent to a hypofunction of the generative glands (ovaries and testes), which is shown clinically by their slowness and frequent lack of development.

THERAPY.

Thyroid extract has been given with the idea that there is a lack of function of the thyroid,

although the gland may be palpated in the majority of mongols. Brilliant results have been reported. There may, of course, be some lack of thyroid secretion in mongols, as there is in other individuals. The improvement must depend on the removal of the myxoedematous characteristics. Mongolism has not yet yielded to any glandular therapy.

Mongols respond to training, if taught by imitation. They are incapable of intellectual work involving calculation or imagination. The brighter children of this class may be trained to unskilled industrial work, particularly some phases of farming.

CONCLUSION.

The solution of the problem of mongolism lies in a better understanding of its metabolism and the interrelation of the endocrine glands, together with an intensive study of parental history.

REPORT OF TWO CASES OF AMAUROTIC FAMILY IDIOCY (TAY-SACHS' DISEASE).*

By CARL W. RAND, M. A., M. D.

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Much has been written upon this disease since Warren Tay (1881) first described the unusual eye-picture in a mentally defective child that came under his observation. In his article entitled, "Symmetrical Changes in the Region of the Yellow Spot in Each Eye of an Infant," one reads; "In the region of the yellow spot of each eye there was a conspicuous, tolerably diffuse, large white spot, more or less circular in outline, and showing in its center a brownish-red fairly circular spot contrasting strongly with the white spot, and this white spot did not look like a hemorrhage or as if due to a pigment, but seemed a gap in the white patch through which one saw healthy structures." Later he described a similar condition in the eye-grounds of two other children in the same family.

In 1887 B. Sachs correlated the ophthalmoscopic findings with the neurological picture in a paper entitled, "Arrested Cerebral Development"; and in 1896 he further reported the nineteen cases then extant, giving the following symptom-complex as pathognomic of the disease, to which he gave the name "Amaurotic Family Idiocy":

1. Mental impairment in the first few months of life leading to absolute idiocy.

2. Paresis of the greater part of the body—flaccid or spastic in type.

3. Reflexes may be deficient or increased.

4. A diminution of the vision, terminating in absolute blindness (changes in the macula lutea and later an optic nerve atrohy).

5. Marasmus and a fatal termination as a rule about the second year.

6. The occurrence of the affection in several members of the same family.

7. Healthy at birth, remaining so to the third or fifth month; and occasionally—

8. Nystagmus.

9. Strabismus.

10. Hyperacuity of hearing.

11. Inordinate laughter was present in one case, and

12. Disturbances in deglutition were occasionally observed in others. It may also be added that the affection usually occurs in Russian Jews.

It seems superfluous at this time to review the literature which has become voluminous since 1896. Above one hundred cases have been reported to date, most of them in Jewish children. The pathology in brief consists of a peculiar degeneration of the ganglion cells of the entire cerebrum and cord, with a disappearance of the Nissel granules and a "ballooning" out of the diseased cell. Aside from the infantile type first described by Sachs, a juvenile form closely resembling it has been described by Vogt and others. Tay, Sachs, Carter, Vogt, Batten, Mayon, Higier, Ichikawa, Wandless, Dercum, Turner, Gordon, Kingdon, Hirsch, Cohen and Dixon, Schaffer, Spielmeyer, Mott, Bielschowski, Frey, Schob, Jacobi, Holden, Clairborne, Higier, Holmes, Gifford, Stewart Smith, R. M., Spiller and Wolfsohn have been the chief contributors.

The following case, No. 16878, was admitted to the Children's Hospital, Los Angeles, December 9, 1916. The patient, A. B., a baby girl, was admitted because of "helplessness and difficulty in swallowing." She was the youngest of four children, of intelligent Russian Jewish parents. The three other children died in infancy or early childhood,—two almost certainly of the same disease from which the patient died. The parents are both well and strong with a suspicious history of syphilis in the father dating back six years. The mother was married at seventeen, and her first baby, a boy, was born a year later. At ten weeks of age the child was stricken with "cholera infantum," and succumbed in a few days.

The second baby, a girl, was born two years later, when the mother was nineteen. She was a full term baby, birth normal, weight nine and a half pounds. For the first six months of life the child appeared normal in every respect, then began to lose weight, became weak, "paid no atten-

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tion to things" (was probably blind), and towards the last was so weak "they couldn't move her." She lost all power of her limbs, could not hold her head up, and "pined away." Death at fourteen months from increasing marasmus.

The third baby, a boy, was born when the mother was twenty-two years of age. He was a full-term baby, normal birth, weight nine and a half pounds, bright and healthy. He remained apparently well until six months of age, when teething set in. Up to this time he "could creep around the floor like other babies." He was never able to stand on his feet, nor, later in the disease, to sit up. Like the second child, he grew weaker and "pined away." During his illness he had a few slight convulsions. He knew both of his parents, but gradually took less notice of them, and paid no attention to playthings. Mother thinks "his eyesight became poor." Had one lateral ventricle tapped at the Royal Victoria Hospital, Montreal, and died five days later at the age of two and a half years.

Fig. 2.
Age seven and one-half months. Still practically normal. Note the expression of face and the position of hands.

Following the death of her third baby, the mother "tried to keep from having children" for sixteen years. She thought that such a long wait "would make a change in her." During this time she twice became pregnant and twice miscarried, each time in the fourth month. It is probable that these miscarriages were induced.

On October 15, 1915, her fourth and last baby was born. This, the patient, was a full term girl, weighing seven and one half pounds at birth, and of normal delivery. She was "always nervous," although bright like other children, and developed normally until six months of age, when she, like the two preceding babies, began to "get sick." Up to this time she could stand on her feet, "use her hands and mind," knew her parents and was especially active. At first it was noticed that she would fall from side to side, then mental impairment set in, and increased until the child "did not seem to know anything." Weight at nine months 21 pounds; weight December, 1916, 17 pounds. During the last few months the child practically lost the use of her arms and legs, and was unable to hold up her head. She was easily startled by the slightest sound. She apparently saw to some degree. Before the onset of the trouble, she could "jabber like other children at play," but later could only moan, or cry weakly when moved. Her bowels were costive; the mother thought that she "hadn't the strength to force a movement." Took food poorly, and occasionally vomited. As the mother states, she "simply couldn't do things—she started out all right, like the other babies, but like them, the sickness crept over her."

Examination revealed an apathetic, feeble-minded baby girl of fourteen months, lying helplessly in bed moaning. Any external auditory stimulus elicited convulsive movements of all limbs, especially of the hands and arms. She held her head deflected to the right. The head was normal in size. The anterior fontanelle was nearly closed and showed no irregularities. There was a normal growth of hair. The pupils were small, equal, and reacted to light and accommodation. No nystagmus made out, globes apparently parallel. Vision seemed impaired, although the child winked when hand was passed across the eyes. Ophthalmoscopic examination of both eyes revealed the typical picture described by Tay in 1881. The disc was distinctly seen, slightly pale, margins very sharp. The optic cup was clear. Vessels appeared normal. In the region of the macula lutea one saw an oval reddish-brown spot surrounded by a white halo. The retinae otherwise appeared normal in color and free from pigment, hemorrhage, or exudates.

There was frequent grinding of the teeth. No abnormalities of dentition. No stigmata of degeneration otherwise noted. The lungs, heart, and abdominal examination were essentially negative. When held in a sitting position, the back bowed in a general kyphosis. X-ray of the spine, negative. No indications of rickets or exanthemata.

There was marked impairment of strength of the entire muscular system. The limbs were moved slowly but voluntarily, and resembled a semi-flaccid condition. Sensory stimulation to pain apparently intact over the entire body, as judged by pinpoint, also touch and temperature sense seemed retained. The deep reflexs were everywhere obtained and seemed slightly exaggerated. Epigastric and abdominal reflexes diminished, but present. Plantar stimulation revealed a dorsal deflection of the great

Fig. 3.
Age thirteen months. Contrast expression of face with Figs. 1 and 2. Hands practically paralyzed. Cannot hold head erect.

toe, both right and left. Kernig and Brudginski were negative. No ankle clonus right or left.

Temperature, 99.2-100.4, 4 a. m.; pulse, 100-148; respiration, 22; urine, acid, light straw; albumin, sugar, casts, 0; blood, Wassermann test was negative; Hyb., 95 per cent. (Talliquist); W. B. C., 8400; R. B. C., 4,728,000.

Both white and red blood cells appear normal. A lumbar puncture was not permitted by the parents. Wolfsohn and others have reported negative findings.

The child died February 10, 1917, following convulsions for two weeks.

Autopsy not permitted.

The second case, No. 17,105, was admitted to the Children's Hospital, January 30, 1917. She was born in Russia December 18, 1915, the second child of Russian Jewish parents. Her parents state that she "cannot sit up nor hold her head up," and that she "scares easily." Both parents are living and well. No consanguinity. One other child, a boy aged two and a half years is perfectly well. His mother states that he is "well and thin." Mother has never miscarried.

The patient was a full term baby, weighing eight pounds at birth; labor was normal, lasting six or seven hours. Aside from constipation, the child has had no ailment until the onset of the present illness.

In the first three or four months of life, the child appeared to be normal in every way. About this time the mother noticed that she seemed "backward"; that she "scared easily"; that is, she would jump at the slightest noise, and at this time the neighbors asked her why the baby did not hold her head up. The child has never learned to talk, and sleeps a good deal. At five months she could "hold things in her hands and play with them." During the past eight months, she has become apathetic, and has forgotten how to use her hands. Her vision has been getting weaker.

Examination reveals a drowsy, feeble-minded Russian child of thirteen months. The striking thing is her listlessness combined with a tendency to jump whenever a noise is made near the bed. The pupils are equal and react to light and accommodation. No nystagmus made out. She follows objects with her eyes. Vision apparently fairly good. There is no paralysis of any muscle group, nor is any sensory change made out. Her condition seems to be what Smith has described as "muscular relaxation"—which often precedes the paralysis in this class of cases. The heart, lungs, and abdomen apear normal. There are four teeth. All deep reflexes are obtained, giving a sluggish but equal response. Abdominal and epigastric reflexes are present and equal. Babinski is positive right and left. Her weight is eighteen pounds, nine ounces.

Examination of the fundi reveal the pathognomonic cherry-red spots in each eye. The disc is clear-cut, a trifle pale, some pigment. The vessels appear slightly smaller than normal. No hemorrhages or exudates made out.

Temperature, 99; pulse, 110-128; respiration, 30; urine, albumin, 0; sugar, 0; casts, 0; Occas. W. B. C.

Blood examination (Dr. M. E. Bettin): Wassermann, negative; R. B. C., 3,668,000; W. B. C., 7,500; Hgb., 53%; neutrophiles, 45.5%; lymphocytes, 51%; large mononuclears, 3.5%; eosinophiles, 0; parasite, 0; 200 cells counted.

Spinal fluid examination (Dr. M. E. Bettin): Slightly increased pressure; clear; two cells per c.m.m.; Wassermann test, negative; Globulin test, negative.

The author believes that these two cases, as reported, are quite typical of Tay-Sachs' Disease. They are almost identical in onset and course. The first child died at the age of fifteen months, the end being ushered in by convulsive attacks. The second child, although still living, has failed greatly in the past three months. It is interesting to note that the first case cited is probably the third child in a Russian-Jewish family to be afflicted with the disease. It is unusual in that sixteen years have elapsed since the last baby died. Since the death of her last baby, on February 10, 1917, the mother believes she has again become pregnant. This has caused her great mental anguish because she fears that another baby would die of Sachs' disease as have the former ones. The author has advised her to allow the pregnancy to run its natural course in the hope that she may have a healthy child. A diagnosis of Sachs' Disease in the former children in this family is based purely upon "circumstantial evidence." Judging from the mother's description of the other cases, and from the fact that the disease is often found in several members of the same family, it seems justifiable to believe that the two former children died of amaurotic family idiocy.

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BETTER TEACHING IN SCHOOLS OF NURSING.

By ANNA C. JAMMÉ, R. N., Director Bureau Registration of Nurses.

The problem surrounding the education and training of nurses in schools of nursing in this state have been claiming attention in the past few years and more particularly since the publication of a curriculum for schools of nursing by the State Board of Health.

The fact that a nurse must have a certain definite and systematic course in the theory and practice of nursing in a school connected with a hospital, has become not only of concern in this state but likewise in forty-four other states where laws governing the practice of nursing are in operation. The question of standardization of accredited schools for nurses, and of what shall constitute a proper basis of nursing education is a question under advisement by those who are concerned with the training of nurses.

At present each state is making its own standardization, and, as in the history of medical education, so also in nursing education the question will have to be settled by adopting uniform minimum requirements alike in all states.

In this state the minimum requirements as to what shall constitute a systematic theoretical and practical course of instruction and a proper basis of nursing education has been interpreted by the State Board of Health, taking into consideration three fundamental points of departure.

1. Entrance requirements.
2. Educational facilities of the hospital.
3. The course of instruction to be followed.

Entrance requirements are based on preliminary education, physical and personal qualifications. The full high school course with credits for English, chemistry, biology, and household economics, will be accepted. This amount of preliminary education should be considered necessary and should not, as heretofore, be taught in the school of nursing, but be given in the high school. In every part of the state we find excellent high schools with teachers well qualified to teach these branches and it is not now even a question that the "poor girl" is kept out of nursing, for the night schools offer opportunities to those who may be obliged to discontinue their education at the working age.

Schools of nursing that have been admitting on a general high school basis, find no difficulty in drawing applicants of good education and with an appreciation of the value of the training offered. On the contrary, those that have been admitting on a low educational basis have lost the applicant who offers good educational prerequisites by the very fact of the low educational standard of admission. When all applicants are admitted on a definite basis of high school education we will obtain a more equal enrollment and at about high school level and will not, therefore, be obliged to reduce instruction to the lowest denominator.

Educational facilities of the hospital include the nature of the services and the number of patients admitted and treated in each service—medical, surgical, obstetric, children; the number of patients in each service coming under the student's care and observation during the three years of her course; class room and laboratory facilities and equipment necessary for teaching purposes. In assuming the responsibility of a school for nurses the hospital sees to providing adequate working and demonstration material. This need not entail a large outlay and when once provided serves for succeeding classes.

The course of instruction embraces the arrangement of theory and practice; the selection of instructors, method of instructing and the supervision of practical work. Too much emphasis cannot be placed upon the arrangement of the course and the instructors selected for carrying it on. In the first place proper grading is necessary by placing elementary and fundamental subjects in the first year and leading the student gradually and logically step by step into the more important points in her second and third years. When the student is plunged immediately on her arrival in the school, into a class on surgical technic or obstetrics, it is unreasonable to expect other than confusion and discouragement. We cannot be too severe on the methods of instruction that have largely prevailed and do still prevail in not a few of our schools for nurses. The teaching frequently follows along the lines of teaching in medical schools and goes far beyond what the student requires. She has been led into details of anatomy and operative surgery and into the sphere of diagnosis and treatment which is not only unnecessary but harmful. Illustration of this is frequently seen in the questions given in the schools. As for example, "Should all cases of acute appendicitis be operated—if so—why?" "Give diagnosis of cerebro spinal meningitis." "Give treatment for infantile scurvy." Good teaching will place the student in command of the knowledge relating particularly and intimately to her work as a bedside nurse and as a physician's and surgeon's assistant. It demands a liberal amount of illustrative material appropriate for her use rather than knowledge obtained in a dissecting room or at autopsies.

The problem of teachers for nurses is serious and should be considered in view of what must be the ultimate result obtained from three years in a school for nurses. Nurses have been slow to take up this particular branch of their work and we find now serious embarrassment on the part of the schools in obtaining sufficient nurse instructors. The teaching has fallen largely to the kind-hearted and often overburdened physician, and the schools have, as a matter of course, accepted these services without any thought of compensation. The physician has been expected to carry long courses of instruction and often he has been obliged to repeat the same course in several different schools. The nurse should be the logical teacher of nurses, and she should receive special training in this work in order that she might take up at least the elementary portion of the instruction contained in the first year, thereby relieving the physician entirely of this part of the instruction.

The weakest point in the education of nurses in this state is in bedside supervision. Schools that

even have a well organized course in the classroom do not maintain sufficient daily and nightly supervision of practical work. This should be considered equally important with classroom work and both should have a close relation. In hospitals where patients are in separate rooms this supervision is difficult to carry on, but where the patients are in open wards the nurses' work can very readily be overseen. Advantage is gained thereby when the school is connected with a university or county hospital or where the hospital has open wards and the students do not work behind closed doors. In the hands of a good nurse instructor the bedside teaching can be made of inestimable value to the student, and the hospital should profit by this in that its nursing will be of a higher grade.

Nurses, as a class, have come under the heavy fire of criticism, the reason for which cannot be attributed wholly to the nurse herself, but must be shared by the school. The lack of careful selection of applicants is primarily the cause of many misfits; the exigencies of hospital service has taken precedence of the training school, hands and feet were considered and not head. Obviously women unfitted for the work have been carried through the school and sent out into public service. The type of instruction and training together with housing conditions and government of the student body have contributed to no small extent to deficiency in the graduate and have largely been responsible for some well founded criticism.

The most hopeful aspect in the situation is the awakening of the student herself to the necessities of her course and the inquiries that are now coming from applicants as to what the course will offer for three years of service in the hospital. The high schools have been thoroughly aroused and have entered into the preliminary requirements for entrance to schools of nursing not only with cooperative spirit, but with real practical enthusiasm. Nothing will do more to steady and to improve the training schools of the state than their assumption of definite educational entrance requirements, a well organized course of instruction and good teaching methods.

SOCIAL INSURANCE.*

By N. R. H. JUELL, M. D., Santa Rosa.

It is time for the medical profession to wake up to the realization that universal insurance against sickness, maternity and old age is coming, so that the movement will not catch us napping, as did the industrial insurance act, the unsatisfactory features of which could easily have been avoided if we had taken the trouble to study the history of this world movement and the lesson taught by countries where it has been tried out.

Insurance against accident and sickness was left to private corporations, lodges and insurance companies, until in '83, when the government of Germany took the first step to organize it into a national system. Other countries followed, so that today almost every civilized nation has adopted some form of industrial or sickness insurance. The systems varying greatly as all is yet in an experimental stage.

We are coming to the conclusion that this is not a matter to be left to private initiative, it is a social question of the greatest magnitude and it takes the concerted action of the nations to solve it.

Statistics tell us that this nation loses 650 millions a year from sickness. When we consider that at least 50% of these are preventable, if the proper steps are taken, and that these steps never will be taken as long as the matter is left to individual corporations, we see one reason why this ought to be a national issue.

Another reason is that private insurance does not reach the workers who need it the most; the underpaid for whom a few days' illness means destitution, perhaps starvation, do not insure. To reach them the insurance must be made compulsory.

Another fault which ought to be corrected by national insurance, is in its relation to the medical profession.

Lodge practice has long been condemned as unethical, because it lowers the standard of the profession; this holds good with most forms of contract practice also, not because it is made in this form but it tends to diminish the individuality of service and makes most doctors fall into a rut.

This would apply to contracts by the state as well, unless a different arrangement is made, and it is one reason why choice of doctor by the patient is the only form of service which has stood the test.

It is evident that the success of any form of health insurance depends on the co-operation of the medical profession. Efficient service pays, as a Bavarian Company says, "8000 paid in the highest class medical service saved 160,000 in compensation expenses."

It would seem proper then that governments framing this kind of laws would consult the medical authorities and be guided by their counsel.

Such, however, has not been the case, and it has resulted in a continuous struggle by the medical profession to get justice.

In Germany there has been over 1000 conflicts between insurance and medical societies and in this the doctors have been victorious in 900, and some of the rest are still pending.

In January, 1914, the total 32,000 doctors went on strike and refused to treat any member under the insurance act. The universities effected a compromise on the following basis:

(1) Contract committees composed of representatives of medical as well as insurance societies.

(2) Free choice of doctor by the patient within the list of the insurance societies.

(3) Compound arbitration courts. Remuneration being left as a local issue.

* Read before Sonoma County Medical Society.

Mark this result of a thirty years' struggle, and let us avoid the strike.

In England, a compulsory insurance law was passed in 1912, which left the choice of insurance to existing societies, so long as a worker was insured, it did not matter where.

The medical profession opposed this because the societies had not treated them fairly, and spent half a million to fight it. Their demands were practically the same as in Germany and they won out.

Payments were made by capitation, or so much a year for each and special for night calls. Surgery and maternity on so much per visit, and specials.

After eighteen months, the result has been an increase of $1000 a year for each of the 20,000 doctors who are on the panels.

This astonishing and suggestive result is due to an increase in the amount of work because the insured use a doctor instead of patent medicine, and it shows also, that a large percentage of the people had no medical care at all, and how poorly the doctors were paid by the societies before.

The average payment per insured was $1.87 per year, and the doctors received $1.00 per visit.

The distribution of patients between the doctors was very uneven, one-fifth of the doctors caring for half of the patients. The lighter cases were treated satisfactorily, the severe were not, and this was attributed to inadequate hospital facilities.

England, as well as the United States, are both poorly supplied with hospitals because this has been largely left to private or denominational interests.

England found this out to its sorrow when the war broke out.

In France, the law compels one hospital bed for each 500; in Germany, one for each 200; and in Russia, one for each 100 in the factories.

The war is bound to change all these conditions, what way is hard to predict; but the spark which started the conflagration was political, the real cause was the spirit of competition among the nations, and there is reason to hope that the remedy which will heal the wounds of this terrible calamity, will be co-operation of which social insurance is an expression.

America has been slow to follow in this movement, inspite of its wonderful industrial development.

This is due, I believe, to the pioneer spirit which finds its expression in such proverbs as: "Everybody for himself, and the devil take the hindmost," or, "This is a land of opportunities; if you don't grasp them it is your own fault."

We are charitable, but the workers in America do not want charity, and social insurance will enable them to pay when they get sick.

We all believe in health insurance, the trouble is to administer it, so it does not work hardship on those who do the principal amount of work, the medical profession.

In the first place, it must be made a government institution and be under the direction of a commission of both insurance and medical men. I believe that every county society should take a hand and see that its representatives in legislature are informed about this subject; the author of our industrial insurance act, evidently, was not informed.

The most difficult problem to solve is the method of choosing physicians. Our industrial act has left it to the employers, and they, again, delegated it to the societies in which they insure. Looking from the standpoint of greater efficiency, this seems to have some merit. It certainly is in the interest of the society to select the best possible man, and this should be to the interest of the insured as well. But there is another side. It touches the democratic principle underlying all our institutions. The people may not be the best judges of who will be the best president, or senator, or judge; but they insist on the privilege of electing them just the same, and where there is a personal contact, as in the relation of doctor and patient, there is still more reason why the choice should be left with the people.

We all know, or ought to know, the great part suggestion plays in treatment; the confidence of the patient in his doctor is worth more than most of the drugs we administer. Even autocratic, paternal, efficient Germany has come to the conclusion that the patient ought to select his own doctor.

The industrial act evidently concludes that the party who pays the bill ought to select his own servants, which is proper, the fault is that the author lost sight of the fact that, however widely the nations differ in their insurance systems, they all agree that the employee should pay part of the insurance. This removes the stigma of charity and makes them feel that they have not alone paid their own insurance, but contributed to the benefit of others. It creates a brotherly, democratic spirit, and justifies their demand to select their own medical attendant.

To safeguard the societies, as well as the patient, there must of course be a state commission who will appoint referees in each county, and when general sickness insurance is established I expect to see in every county a State hospital with resident physician, and a staff of specialists, forming a diagnostic section to which all cases requiring special care can be referred.

How to guard against the uneven distribution of patients, as occurred in England, is a difficult question. I expect it will be even worse here, as the qualification of the profession is more uneven. I believe that if we get a good working plan for our sickness insurance this will solve it by "natural selection." This is one of the benefits I expect the profession will get from social insurance.

We all know that the practice of medicine is not on the merit system; we have to compete

with all kinds of quacks, and they often get the best of us because of greater business ability and advertising.

When every case has to be reported to a State commission, they will soon be eliminated. It will eventually be a "survival of the fittest," not to mention the incentive to study our cases more thoroughly when every one is an examination question before competent judges.

I wish to mention some more reasons why the profession should work for this movement:

(1) We will see our cases earlier, and hence be able to do more for them because, when the patient knows the services are paid for, he will not wait till he is incurable before he consults a doctor.

(2) When every case has to be examined and reasons given before operative measures are undertaken, there will be less unnecessary surgery.

(3) W will have more patients and get more experience.

(4) Medical statistics will be more reliable.

(5) There will be less chronic invalids dragging out an existence, because they have not the price of an operation, and are too proud to beg one.

(6) Free dispensaries and charity work will be eliminated.

(7) We do not need to worry about collections.

As to the manner of payment, there are three ways of being tried: per capita, per visit, and fixed salary. The capitation system, or so much per year for each insured is the same as our lodge practice and, as this has generally been declared unethical, it will hardly be accepted.

The fixed salary, except for members of administration, referees, etc., although desirable, is not practical, at least, to start with.

Attendance, or pay per visit, is the only system left; but even this will give rise to constant friction. The patient will demand constant attendance, the society will not allow more than absolutely necessary. How often to visit a patient is always a puzzle, and too often determined by the condition of the doctor's pocketbook. Let us hope Dr. Rubinow will find a solution. In conclusion, I will quote some of his remarks:

"Whether the millions protected by sickness insurance are granted the right of selecting their own doctor on the idea that the patient may be the proper judge, or whether the doctor is selected by hospital staffs or county committees, whether the doctor is paid a salary, as in some German cities, or by the Russian Zemstvo system, perhaps the greatest organization in the world; or whether it should be computed in proportion to the visits the doctor succeeds in making, as in Leipzig, or in proportion to the clients he has succeeded in attracting, as in England, are questions in which the medical profession should and will be heard.

"There is only one way to meet this economic and ethical problem which has yet been devised, a system of insurance which meets the economic loss of illness at least half way, and a system of organized medical aid which reduces its cost substantially without pauperizing the patient or degrading the doctor.

"Social insurance against sickness meets both these problems and that is why it has become a world wide movement. The medical profession can fulfill the time honored oath of Hippocrates by giving to it a broad social content, and by helping instead of hindering the development of social insurance."

State Society

IMPORTANT NOTICE—INDEMNITY DEFENSE FUND.

Notes are now becoming due.

Do not let your membership lapse.

Each member will be informed ten days in advance of the due date of his note.

Medical Defense Rules, Section 3: "Dues must be paid to the Secretary of the County Medical Society to which each member belongs prior to the end of February of each year. Any member whose dues are not paid prior to March 1st and whose name is not reported as having paid his dues by the Secretary of his County Medical Society is dropped from the list of members in good standing as of January 1st of such year, and such member is deprived of Medical Defense afforded by the State Society for the period from January 1st of such year to the date when his assessment is received by the State Society. Members whose assessments are not received on or before February 15th of each year will be notified by letter from the Secretary of the State Society of such fact."

STATE DUES FOR 1918.

In order to defray the increased expenses of the Society due to its wider activities, and in response to the recommendations of the Council, the House of Delegates fixed the assessment for 1918 at $7.00, being an increase of $1.00 over the dues of last year.

At the last meeting of the Council of the Medical Society of the State of California, held August 25th, the question of members in service being exempted from paying dues, was raised. Several communications from the component societies were read and discussed dealing with the question—it is a question—whether or not members out of the State on military duty should have their dues paid by the County Society, or by some other method. This matter is now under advisement.

COUNTY SECRETARIES TAKE NOTICE!

Kindly check the name of your President and Secretary appearing in the list of Presidents and Secretaries of the County Medical Societies on page xlviii of this issue. Any corrections should be received by this office not later than the 10th of December to appear in the January number.

The initial assessment for the organization of the Indemnity Defense Fund was fixed at $30.00, one-half to be paid in cash upon subscription, and the balance by note due one year thereafter.

In fairness to those who joined the Fund promptly, it was necessary to fix a limit upon this method of payment, and therefore DECEMBER 31st, 1917, was settled upon as the LAST MATURITY DATE FOR NOTES.

Commencing January 1st, 1918, a member joining the Indemnity Defense Fund will pay the full initial assessment of $30.00.

ALL NOTES DATED DECEMBER 31st, 1917, are now becoming due, and must be paid on or before December 31st, 1917.

Don't bother me now; I'm hunting Dr. Card's ad in the Chronicle. "Dr. Card, Woman Specialist," has been arrested nine times, according to police register, "for criminal malpractice." A mere matter of curiosity—if "The Leading Newspaper of the Pacific Coast"—the disseminator of valuable information—is still running "Dr. Card" at the head of its "Medical."—"The Star."

COMPLETE BIRTH REGISTRATION AN AID IN THE SOCIETY'S WORK.

New Zealand has incorporated in its plan of government some of the best traditions of the older countries. Thus, in spite of its youth as a country, it has established so perfect a system of birth registration that the figures are accepted by the authorities in European countries. In this, New Zealand stands in striking contrast to the United States, which, of all the civilized countries, has no general system of accurate registration. The fact that births and deaths are properly recorded has aided the health society in every stage of its work and has made it possible at all times to gauge the effect of the work in reducing the number of infant deaths.

Society Reports

ALAMEDA COUNTY.

The personnel of Army Base Hospital No. 47, which has been completed by the San Francisco Chapter of the American Red Cross and forwarded to Washington for certification by the national organization, includes the name of an Alameda doctor—Dr. James K. Hamilton.

Dr. Hamilton has conducted offices in Encinal Hall, at Bay-street station, for a number of years and is well known in local medical circles.

The resignation of Nathan N. Ashley as interne at the Emergency Hospital was accepted and Dr. Charles A. Mackey appointed in his place, at a compensation of $100 a month.

At the request of the Alameda County Probation Committee, Dr. Sarah I. Shuey was officially named as physician to the girls in the Detention Home, at a monthly salary of $50. Dr. Shuey has been engaged in this work for some time, but without official recognition.

Dr. R. Morton Manson, resident physician of the Alameda County Hospital, was married recently to Miss Madeline Strohl of Oakland. Miss Strohl is the daughter of the late Mr. and Mrs. Godfrey Strohl, a pioneer family of San Francisco. Dr. Manson, who is well known in the local medical fraternity, is a son of Dr. and Mrs. John Manson of Placer county.

The wedding took place at the bride's home in Oakland, Rev. Frank Silsley of the First Presbyterian Church officiating. Only the immediate family of the couple were present.

Dr. A. C. Siefert, late of the Lane Hospital staff in San Francisco, has joined the medical staff of the Livermore Sanitarium. Dr. Siefert is a graduate of the medical college of Stanford University.

In June of this year the Alameda County's Institution Commission, consisting of Mr. Harrison Robinson, chairman; Dr. Aurelia Reinhardt, Mr. Frank A. Leech, Jr., Dr. Robert Legge, Mr. J. Donohue and Dr. O. A. Hamlin, were appointed to administer the affairs of Alameda County's Institutions through recommendation to the Board of Supervisors.

This commission was confronted at its appointment with the reconstruction of the present County Infirmary, the building of a new hospital in the City of Oakland, and the completion and equipment of the new tuberculosis Sanatorium at Livermore; and was also charged with the work of placing the various institutions under civil service and a promotion system based on efficiency.

To place the present hospital on a proper basis four internes and a resident physician are now employed in place of two internes and a medical superintendent. The Oakland College of Medicine has co-operated with the commission in greatly increasing the visiting staff. Medical staff members of the Oakland College of Medicine now visit the institution four days per week and the visiting surgical staff is taking over the bulk of the surgical work heretofore cared for by the superintendent. The nursing staff and training school have both been increased.

Dr. R. J. Cary, one of the specialists in institution work for tuberculosis in this country, will be the superintendent of the new Livermore Institution. His staff will be chosen entirely from civil service lists.

Among the men who attended either or both of the big surgical meetings held in Chicago last month were Drs. L. P. Adams, E. N. Ewer, David Hadden, C. A. Dukes, A. S. Larkey, M. M. Enos, A. Galbraith, F. H. Bowles, Austin Clarke and A. F. Maine.

The following program was presented at the meeting of the Alameda County Medical Association, held Monday evening, November 5th:

1. Carcinoma of Sigmoid with presentation of Specimen. Dr. D. Crosby.
2. Hypertrophy of Prostate with presentation of Specimen. Dr. R. T. Stratton.
3. Moving Pictures and Eye Strain. Dr. Milton Schutz.
4. The interpretation of the Radiograph. Dr. L. A. Martin.

Dr. Stratton's paper was discussed by Drs. O. D. Hamlin and L. P. Adams.

Dr. Schutz's paper was discussed by Dr. W. L. Friedman.

Under the auspices of the American National Red Cross two courses in First Aid to the Injured have recently been given in the Oakland College of Medicine. The classes were well attended.

The call to colors of several members of the faculty of the Oakland College of Medicine has necessitated various changes in the personnel of the instructors. Dr. John McLaren, of the University of Oregon, has been secured to head the Department of Physiology for the current year. Drs. H. Gordon McLean and A. Fibush have been appointed to the Department of Pediatrics.

Miss Emily W. Bauer, from the Rockefeller Institute, a graduate of the Presbyterian Hospital of New York, has been appointed to the position of superintendent of the Training School of Nurses at the Samuel Merritt Hospital.

Dr. Geo. T. Pomeroy has just returned from an Eastern trip.

A plan to separate those mentally afflicted from the other inmates of the county infirmary is under consideration by the Psycopathic Association of Alameda County. A survey of the institution will be conducted with this end in view and Dr. Jau Don Ball will examine the inmates to test their mental status. He will be assisted by Mrs. Vinnie Hicks, who formerly was in charge of similar examinations among Oakland school children.

CONTRA COSTA COUNTY.

The Contra Costa County Medical Society met in the Abbott Emergency Hospital Building, Rich-

mond, Cal., Saturday evening, October 29th, in regular monthly session.

The society was called to order by the president, Dr. P. C. Campbell. Those present were:

From Richmond—Drs. U. S. Abbott, P. C. Campbell, H. L. Carpenter, W. E. Cunningham, C. R. Blake, Marguerite Geininger-Keser, W. W. Frazer, Hall Vestal, W. C. Smallwood, C. S. Lipp and W. E. O'Brien.

Drs. W. S. George and A. L. Morrell, Antioch; Dr. E. E. Johnson, Concord; Dr. J. H. Adams, Crockett; Dr. C. E. Camp, San Pablo; Dr. J. T. Breneman, El Cerrito.

The minutes of the previous meeting were read and approved and the usual routine business of the society was transacted.

The motion was regularly made and seconded that the president appoint a committee of two to arrange for the annual banquet at the Hotel Oakland, and the election of officers, Saturday evening, November 17th. Dr. W. E. Cunningham and Dr. H. L. Carpenter were appointed on this committee.

Dr. Jos. H. Catton of San Francisco read a paper on "Malingering." This was one of the most interesting papers ever read before the society. The paper received an unusual amount of discussion by the members present.

At the conclusion of the regular program the nurses of the Abbott Emergency Hospital served refreshments.

Dr. Elmo Zumwalt, son of Prof. Zumwalt of the Richmond schools, a graduate of the Richmond High School and more recently of the University of California Medical College, has enlisted in the United States Army with the rank of First Lieutenant in the Medical Corps, and been assigned to Angel Island for duty.

MENDOCINO COUNTY.

A conjoined meeting and barbecue was held at Willits by the Mendocino County Medical Society and the N. W. R. R. Surgeons' Association, on Saturday evening and Sunday forenoon, July 14th and 15th. On the arrival of the evening train the special guests and the fraternity present were banqueted at the Hotel Willits by Dr. F. G. Gunn. "Nothing small about Dr. Gunn."

Drs. Thomas W. Huntington and Stanley Stillman, of the Committee of American Physicians and acting for that committee, came up to Willits to address the medical fraternity and the public within the jurisdiction of the Mendocino County Society, on the urgent needs of the hour and the danger of procrastinating in this emergency. It suffices to say that this meeting and barbecue were a success par excellence, especially the barbecue. I here take the liberty of quoting our "special guests." "Never had a better time and never enjoyed a meeting more."

It was our genial vice-president, Dr. G. W. Stout, who impaled the ox on the spit (at least that part of it that was used at this barbecue), and in person played hurdy-gurdy with it over the fire and timed it to a turn for the handout. I have no doubt each participant cherishes its memory. Long live medical preparedness and fraternal feeling in the ranks!

No meeting in August or September.

The October meeting was held on Saturday, the 21st, in the office of Dr. Harper Peddicord, at Fort Bragg. Our president, Dr. F. C. Peirsol, in the chair. Members present: Drs. Peirsol, H. Peddicord, A. C. Huntley, L. C. Gregory and O. H. Beckman.

Dr. Frank S. Baxter of Willits, with card from Monterey, was elected to membership. Dr. Peddicord read an excellent paper on "Diagnosis and Treatment of Chronic Gonorrheal Urethritis."

A resolution of condolence was passed on the untimely death of our fellow-member, the late Dr. G. A. Woelffel, and the secretary was instructed to transmit the same to the widow and family.

After the meeting we were treated to a turkey banquet at the home of Dr. Peddicord.

Lieutenant H. H. Wolfe was reported to have left the training camp for somewhere in France.

Assistant Surgeon R. H. Hunt is at San Pedro looking after Uncle Sam's boys in blue. He reports they have six medicos on the staff, but supposed some of them will soon get orders to move. He is kept busy taking finger-prints, etc., for identification and is chafing to be smelling powder and feeling broadsides.

Dr. R. A. Babcock is at Camp Lewis, Wash., preparing for the front. Dr. H. O. Cleland is waiting for orders to report

The local papers report that Dr. R. L. Richards, superintendent Mendocino State Hospital at Talmage, has been called to active duty.

SACRAMENTO COUNTY.

Sacramento County has reason to feel proud of the "bit" it has done for its country's service thus far. To date it has furnished nineteen doctors for the Army and Navy. The following have received their commissions:

Majors—C. E. Turner, E. S. Loizeaux.

Captains—Frederick Fairchild, Philip M. Thomas.

First Lieutenants—James H. Parkinson, N. G. Hale, H. Zimmerman, A. B. Diepenbrock, C. L. Bittner, Howard Cameron, J. Wm. Crawford, A. L. Munger, J. R. Snyder, L. M. Leizenring, Mayer J. Wahrhaftig.

Assistant Surgeons, U. S. N.—C. L. Andrus, A. K. Dunlap, Wm. Miller, Carl Brown.

The regular meeting of the Sacramento Society for Medical Improvement was held on October 16, 1917, at the Hotel Sacramento, the president, Dr. Jones, in the chair. Number of members present twenty-six. Fourteen visiting dentists, as the Society had sent a request to the Dental Society to meet with the Medical Society at this meeting.

Report of cases: Dr. Twitchell reported a case of Addison's Disease.

The paper of the evening was read by A. W. Ward, D. D. S., of San Francisco.

Subject: Foci of Infections of the Mouth and Relation to Systemic Diseases.

The paper was discussed by Drs. Gundrum, Smith, Brownell and Taylor and closed by Dr. Ward.

Dr. Ward emphasized the fact that mouth infections, and pyorrhoea especially, must be treated surgically and that emetine hydrochloride is of very little use in the treatment of pyorrhoea. The paper was illustrated by stereopticon views.

SAN BERNARDINO COUNTY.

Dr. G. G. Moseley has tendered his resignation as president of the County Medical Society, made necessary by the fact that he is leaving Redlands, where he has resided for sixteen years, to take up his residence in San Francisco, to be associated with the Aetna Life Insurance Company as medical director of the accident department. Dr. Moseley's resignation was accepted with expressions of regret.

Dr. B. F. Church, Redlands, was elected president.

Dr. Dudley Fulton of Los Angeles read a paper on "Renal Insufficiency," which was well discussed. He also discussed his late trip to Washington on war matters, and his work at the Peter Brigham Hospital in Boston, Mass., on asthma.

Dr. U. B. Power of Redlands has moved to

New York City. He will spend this winter in Florida.

The regular meeting of the San Bernardino County Medical Society was held at the University Club in Redlands November 6, 1917. The president appointed the following officers:

Board of Censors—Drs. B. F. Church (chairman), C. A. Sanborn, C. F. Whitmer, J. B. Craig, T. H. McHugh.

Finance—Drs. T. M. Blythe, J. L. Avery, R. S. Gibbs.

Program—The President, Secretary, Drs. C. G. Hilliard, P. M. Savage.

SAN DIEGO COUNTY.

The County Supervisors recently let the contract for the new Tuberculosis Hospital.

St. Joseph Hospital is planning an extensive addition to the present building on University Avenue.

The Medical Library is arranging to feature its annual meeting in December with a public lecture by Dr. H. M. Sherman of San Francisco, on the Cancer Problem.

The following members of the local profession have responded to the call of their country and are either in service or awaiting orders:

A. E. Banks, A. N. Bobbitt, R. C. Carter, V. G. Clark, J. F. Churchill, G. T. Courtenay, F. J. Dingemann, R. H. Donnell, J. F. Grant, C. Harbeck, R. S. Irvine, R. B. Irones, M. C. Harding, W. L. Kneedler, L. C. Kinney, T. C. Little, H. C. Loos, A. C. Magee, F. W. Muller, B. J. O'Neill, J. A. Parks, T. C. Pounds, W. R. Ream, L. B. Sandall, Robt. Smart, R. W. Thomas, H. A. Thompson, T. F. Wier.

SAN FRANCISCO COUNTY.

During the month of October, 1917, the following meetings were held:

Tuesday, October 2.

At the request of the Council of National Defense, a general public meeting was held in the ballroom of the Palace Hotel. Major I. H. Jones, M. D., Signal Corps, U. S. Army, spoke on General Gorgas' plan for examining applicants for the Aviation Service.

Tuesday, October 16. Section on Surgery.

1. Dead teeth. Josef Novitsky, D. D. S.
2. Acute gastroduodenal perforations. Report of six cases. Edmund Butler.

Tuesday, October 23. Mount Zion Hospital Clinical Evening.

1. A case of laminectomy five years after operation. Julius Rosenstirn.
2. (a) A new operation for colostomy; demonstration of patient.
   (b) Death from hematemesis due to silent ulcer of the stomach; demonstration of stomach. Charles G. Levison.
3. Care of pregnant women. Reginald Knight Smith.
4. Anesthesia in labor. Louis I. Breitstein.
5. Diagnosis and treatment of bladder lesions. Illustrated with lantern slides. Louis Clive Jacobs.
6. Demonstration of specimen: hypernephromata. E. J. Casper.

Tuesday, October 30. Section on Urology.

1. Seminal vesiculotomy in the treatment of gonorrheal rheumatism. James R. Dillon.
2. The venereal situation among the forces at war. John C. Spencer.
3. Outline of the work of the Bureau of Venereal Diseases of the California State Board of Health. Samuel A. Goldman.

Dr. Joseph Catton of San Francisco, recently commissioned Lieutenant in the Medical Reserve Corps, is now stationed at Camp Fremont as Chief of the Medical Service of the Base Hospital. This is a provisional assignment until such time as Base Hospital No. 47, of which Dr. Catton is assistant director and Chief of Medical Service, is called to France.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the residence of Dr. B. F. Walker Friday evening, October 26th, President C. R. Harry presiding. Those present were: Drs. C. R. Harry, B. F. Walker, Minerva Goodman, C. R. Holliger, J. T. Davison, Mary Taylor, S. E. Latta, H. E. Sanderson, E. A. Arthur, Margaret Smyth McCloskey and D. R. Powell.

A letter was read from the State Medical Journal requesting that the county society elect an associate editor for the Journal. It was moved, seconded and carried that the secretary of the society be appointed associate editor for this county.

The paper of the evening was presented by Dr. B. F. Walker, on "Eye Strain; Its Diagnosis and Treatment." The doctor spoke particularly of the necessity of a careful examination and the fitting of glasses, and the tendency of the general practitioner to dismiss the eyes as an etiological factor when the patient was wearing glasses without considering the possibility of the glasses being incorrectly adjusted. He also mentioned the necessity of an early examination in school children and of the beneficial results obtained with the proper fitting of glasses in cases of squint.

The paper was discussed by several of the members present, and at the conclusion of the discussion the meeting adjourned to enjoy a most delicious spread.

DEWEY R. POWELL, Secretary.

SHASTA COUNTY.

Dr. D. B. Fields, Captain in the Medical Corps, U. S. A., who is a member of the Shasta County Medical Society, and family have left Weaverville for San Francisco, where the doctor will leave his family temporarily, while he will proceed to his assignment at Camp Douglas, near Salt Lake City, Utah.

Dr. Bly has located in Weaverville permanently to follow his profession of medicine. Dr. Bly has a son, Fred J. Bly, who is in the 158th Regiment, 40th Division, now located at Linda Vista.

SONOMA COUNTY.

Dr. J. W. Seawell has purchased the Santa Rosa Hospital from Dr. Temple. Miss Marian Hill is the superintendent. Dr. Temple is stationed at the Presidio.

Dr. I. A. Wheeler has moved from Healdsburg to Fresno.

Dr. Raynes of Duncans Mills has moved into Dr. Temple's office in Santa Rosa.

Dr. J. H. Shaw is away for two months. He has been attending the Mayo clinics and is now in New York.

Dr. Blackshaw has moved from Sebastopol to Pittsburg, Cal.

Dr. J. W. Kerr of the same place is soon to take up his residence in Oakland, retiring from active practice.

Miss Eliza Tanner and Miss Rae Du Vander have been accepted as Red Cross nurses and will shortly leave for duty.

STANISLAUS COUNTY.

Dr. R. W. Brace, who was one of the first Stanislaus physicians to volunteer their services

to Uncle Sam for the German war, and who received his commission of Lieutenant several weeks ago, has received orders to report at Camp Lewis, Wash. Dr. Brace has been expecting and preparing for the call for some time. He is pleased to be assigned to the camp at which the Stanislaus boys are receiving training.

VENTURA COUNTY.

Dr. R. W. Avery has handed to the city trustees his resignation as health officer of Oxnard, a position which he has held for several years. Dr. Avery expects to report for duty as First Lieutenant in the Medical Corps. In his resignation Dr. Avery thanked the Board for its hearty co-operation with the health officer and health office.

Book Reviews

General Medicine. Edited by Frank Billings, assisted by B. O. Raulston. Vol. 6 of Practical Medicine Series 1917. Chicago: Yearbook publishers. 1917. Price $1.50.

Contents.

Infectious diseases. Gastro-intestinal tract. Diseases of liver and gall bladder. Diseases pancreas.

The Surgical Clinics of Chicago. Volume 1, No. 4 (August, 1917). Octavo of 887 pages, 71 illustrations. Philadelphia and London: W. B. Saunders Co. Published bi-monthly. Price per year: Paper, $10; cloth, $14.

Contents.

Clinic A. J. Ochsner: Craniotomy for Jacksonian epilepsy; tumor in undescended testicle. Clinic A. D. Bevan: Technic of colostomy, prolapse rectum. Clinic Kellogg Speed: Carcinoma lip; decompression for traumatic epilepsy; decompression for hypophyseal tumor; occipital decompression for increased intracranial tension; perforated gastric ulcer. Clinic E. W. Ryerson: Tendon transplantation for poliomyelitis paralysis. Clinic Carl Beck: Pendulous abdomen; transperitoneal approach to kidney; diastasis of external oblique simulating hernia and cure. Clinic D. N. Eisendrath: Common duct calculi. Clinic D. C. Straus: Strangulated appendix in femoral hernia. Clinic A. H. Curtis: Leukorrhea. Clinic P. H. Kreuscher: Semilunar cartilage. Clinic J. S. Eisendrath: Mechanical aids in diagnosis lesions upper urinary tract. Clinic G. Kolischer and J. S. Eisendrath: New method anesthesia in prostatectomy. Clinic H. L. Kretschmer: Benign hypertrophy of prostate. Clinic G. E. Shambaugh: Carcinoma maxillary sinus; chronic empyema nasal accessory sinuses; suppurative otitis media with paralysis external rectus; chronic infection submaxillary gland; chronic empyema maxillary sinus; Ludwig's angina. Clinic C. A. Parker: Acute suppurative destruction upper femoral epiphysis. Clinic P. Oliver: Epithelioma cheek; acute retention urine; carcinoma stomach; bilateral renal calculi; tetanus following burn.

1916 Collected Papers of the Mayo Clinic, Rochester, Minn. Octavo of 1014 pages, 411 illustrations. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, $6.50 net; Half Morocco, $8.50 net.

The Mayo Clinic has developed from a surgical institute into a great school of clinical and scientific research. Its yearly publications have so increased in size and scope that a detailed review is impossible. Among the papers in the volume for 1916 one does not miss the valuable clinical and statistical studies which one has come to expect from the Mayos, notably Eusterman and Balfour on peptic ulcer, C. H. Mayo on diseases of the gall bladder, Giffin on splenectomy and diseases of the blood and spleen, Robinson on bronchiectasis and various diseases of the lung. Rosenow contributes noteworthy experiments on the selective localization of streptococci in the stomach, duodenum, gall bladder and spinal cord. Besides these there are papers on orthopedic subjects by Henderson, on heart block by Willius and Blackford, on amebiasis by Sanford, etc., etc., all of which give evidence of how far the Mayo Clinic has branched out from its original activities.

If the volumes continue to grow in size and diversity of content it might be well to split them into three, and make one each of medical, surgical and pathological papers. L. E.

"Nostrums for Kidney Diseases and Diabetes." Prepared and issued by The Propaganda Department of The Journal of the American Medical Association; 47 pages; deals with 34 nostrums; illustrated. American Medical Association, 535 North Dearborn street, Chicago, Paper, 10 cents, postpaid.

This is the latest pamphlet issued by The Propaganda Department of The Journal of the American Medical Association as part of its work in giving the medical profession and the public the facts regarding different phases of the nostrum evil and quackery. Nostrums for kidney diseases and diabetes are grouped together in one pamphlet, not because there is any essential relation between diabetes and kidney disease, but because the average quack makes no distinction between the two conditions and recommends his nostrum indiscriminately for both. It is not necessary to tell physicians that drugs will not cure either kidney disease or diabetes, but it is necessary to apprise the public of this fact. Whatever justification there may be for the sale of home remedies for self-treatment, there is no excuse, either moral or economic, for selling preparations recommended for the self-treatment of such serious conditions as diabetes and kidney disease. Every "patent medicine" sold for the cure of these diseases is potentially dangerous and inherently vicious. The pamphlet is an interesting and instructive one to put in the hands of the layman.

Medical State Board Questions and Answers. By R. Max Goepp, M. D., Professor of Clinical Medicine at the Philadelphia Polyclinic; Assistant Professor of Clinical Medicine, Jefferson Medical College. Fourth Edition Thoroughly Revised. Octavo volume of 724 pages. Philadelphia and London: W. B. Saunders Company, 1917. Cloth, $4.25 net.

This book is offered as a guide to the graduate in medicine who wishes to prepare for the state licensing board examination. As a guide it ought to be of considerable use; but unless the student has had adequate medical training he can not hope to be able to "cram" and pass some state board examinations. A well trained individual with good basic and complete medical education, could by reviewing a large series of state board questions, refresh his memory sufficiently to be able to pass an examination. One without this foundation, however, could never hope to cram in this way and pass a discriminating board. There is a growing tendency on the part of the state boards to make examinations more searching and to attempt to determine if the applicant has a broad general education. For instance,

questions beginning with the word "discuss," with the idea of drawing out the candidates' real knowledge, are very often seen. Under such conditions quiz compend answers will not suffice. As stated before, the book under review should be a very useful guide for one with a complete medical education who desires to refresh his memory.

ALDERSON.

Text-book of Organic Chemistry for Students of Medicine and Biology. By E. V. McCollum, Ph. D. New York: Macmillan. 1916. Price $2.25.

This work is an academic guide for a semester in physiologic chemistry. Emphasis is placed upon biologic phenomenon rather than synthesis. Technical matters and laboratory manipulations are not considered. The subject in hand begins with the simpler saturated fatty hydrocarbons and broadens with presentation of the alcohols, ethers and aldehydes before the chapters on the more complex fatty acids, waxes and paraffins are reached. The carbohydrates are considered in detail with the chemical changes involved in the fermentation of the sugars. The benzines and their derivatives are also extensively considered. There are short chapters on certain alkaloids and organic arsenic compounds. Only a limited discussion of the proteins is given.

This is an admiraple work, is compact, liberally indexed and confined strictly to the theoretic discussion of the topics presented. There is unfortunately an impression given the reviewer that in the writer's zeal to restrict himself, a certain loss of personality and completeness arises. A consistent reasoning is shown and every effort is made to simplify apparently complex organic chemical changes, and the student is not compelled to burden his memory with chemical formulas or seek other references for the thorough grasp of the subjects at hand. E. A. V.

Impotency, Sterility and Artificial Impregnation. By Frank P. Davis, Ph., M. D. Pp. 135. St. Louis: C. V. Mosby Co. 1917.

The author says in his introduction that: "The production of new books for the physician appears to be limited only by the invention of titles. Many of the books contain but little new material." He says further: "I am well aware that there are a number of pretentious works on sexual subjects, but none that I have read fulfilled my wants." Our expectations were great when we read on page 10: "I have attempted to blaze out a new trail, and have established some landmarks," but our disappointment was greater yet, because in the little book we found not even the customary "little new material," we found nothing new, no blazed trails, and only a few old landmarks.

True, we are told a few new things, but they are not material; for instance, on page 14 the author says that: "The sexual ability of the male depends upon the erection of certain **muscular** organs." Ella Wheeler Wilcox celebrates her first appearance as an authority on the subject, and the author does not seem to know that spermatozoa is the plural of spermatozoon.

We must agree with the author when he says on page 106: "Gold has long held the reputation of exerting a specific action upon the sexual organs," only we cannot believe that gold does much good when taken internally. V. G. V.

The Medical Clinics of North America. Volume 1, No. 2. The Philadelphia Number, July, 1917. Octavo of 269 pages, 28 illustrations. Philadelphia and London: W. B. Saunders Company, 1917. Published by-monthly. Price per year: Paper, $10; cloth, $14.

Contents.

Aortis, Thomas McCrae; classification chronic nephritis and relation of infection to kidney diseases, Alfred Stengel; cardiac disease and digitalis, H. A. Hare; aortic aneurysm, leukemia, Joseph Sailer; progressive myocarditis, etc., D. Riesman; diagnosis pulmonary tuberculosis by Roentgen ray, H. K. Pancoast; angina pectoris and allied conditions, A. A. Stevens; mechanical disorders and irregularities cardiac contraction, R. V. Patterson; gastric infection, M. E. Rehfuss. ulcerative endocarditis, etc., J. Daland; diagnostic value examinations cerebro-spinal fluid, J. A. Kolmer; auricular fibrillation, long duration, J. H. Musser Jr.; poliomyelitis, T. H. Weisenburg; essentials and limitations of average diet, O. H. P. Pepper; causes of reaction after salvarsan, J. F. Schamberg; osteitis deformans, E. H. Funk.

Text-book of First Aid and Emergency Treatment. By A. C. Burnham, M. D. Philadelphia and New York: Lea and Febiger, 1917.

It is a very welcome commentary on the almost universal demand for first aid instruction in the United States that such a book as this has been brought out. Dr. Burnham sees clearly the educational and cultural aspects of first aid instruction quite as well as he sees the practical application of the principles of first aid to the commoner emergencies of daily life. Regarded from this point of view, this book will find its best use in the hands of the instructor, to whom it will prove a mine of inspiration in lecturing. For the lay reader, one feels that the text is a little too technical and comprehensive in its scope; and the treatment occasionally so elaborate that the purely temporary and transient nature of first aid may be lost sight of. To enumerate categorically all the errors of omission and commission in this very earnest and honest book would be doing the author a great injustice, but the reviewer feels that picric acid is still entitled to mention in the case of burns and that faith in the tourniquet as a controller of hemorrhages should not be undermined. On the other hand, too much cannot be said in favor of the excellent way in which Dr. Burnham has grouped the various branches of the work so as to correlate as many facts as possible and also the way in which the diagnoses are logically deduced from the evidence furnished by patient and surroundings. We have here a book that will be a most valuable aid to all instructors in this special field. But it cannot be unhesitatingly recommended for use among the laity, except with the understanding that it is to serve as a text to be lectured from by a competent instructor. G. H. T.

Correspondence

FROM A BELGIAN- SOLDIER.*

(Translation.)

At the Front, Sept. 18, 1917.

Miss:—I am going by these lines, my humble unknown, to thank you for your generosity. I yesterday received, by means of a committee, a box of cigars in which was a card. On this card I found your address. As it is to you I owe these excellent cigars, I have no wish to be an ingrate, and I thank you from the bottom of my heart.

If you could know how agreeable it is for us Belgians, and for me in particular, to learn that very far across the seas there are charitable souls

*See editorial comment.

who think of us, who are being blotted out of existence by the war.

For three years I have been at the front. I have left in Belgium my entire family and have never received any news of those I love. It is enough to say to you how terrible our situation is. Also, I have been very touched in knowing the sentiments which exist in the United States for my unhappy country and its brave soldiers.

We have every hope and confidence in the final victory of the allies, who will return to our relatives and families everything, since the great American Republic has joined the allies in the struggle of right and justice against barbarism.

I finish, Miss, in assuring you of my sincere remembrance.

EDMOND LUCAS,
Sergeant, Sixth Infantry, D. 123, Field Army, Belgium.

PUBLIC HEALTH NURSES.

To the Editor:—Public health nurses have greatly increased during the past few years. Hundreds, perhaps thousands, of small towns and rural communities, as well as large cities, have come to regard them as indispensable community servants. Their service represents at least a minimum of skilled nursing which can usually be supplemented with safety by family, neighbors or trained attendants. Their value as health agents is now pretty generally recognized by health officers, school boards and manufacturers, as well as by the public itself.

Because their work is largely preventive, one of their chief values is that they persuade many people to call upon their doctor before an illness has become serious enough to have convinced them that it was necessary to consult him. Nevertheless, their opportunities as health teachers most often depend upon and follow their entry to the homes in time of need due to illness. They are very dependent upon the local physicians because it is an invariable rule that no visiting or public health nurse shall perform any treatment nor administer any medicine, nor even make repeated calls upon a patient except with the consent and direction of the family physician.

Oftentimes these facts are not understood by country doctors, and consequently they refuse to call for the nurses' assistance, and even discourage their patients and their families from doing so. This situation is becoming less and less frequent, but still exists in some localities and among some doctors.

More than ever, these nurses will be needed now that so many physicians are being called to military duty, and yet they cannot serve the people unless the doctors who remain at home will recognize and call upon them.

The members of the National Organization for Public Health Nursing, among whom are many Red Cross town and country nurses, have instructed me to bring this matter to the attention of the state medical associations in the hope that they will see fit to urge their county societies to interpret the work of public health nurses to their members, to clear away the misunderstandings which are now in some places preventing the best and fullest use of public health nurses and to encourage employment of their services.

Representative women in this field will welcome opportunities to discuss the subject before State or local associations.

Sincerely yours,
ELLA PHILLIPS CRANDALL,
Executive Secretary.

New York City, October 19, 1917.

RESIGNATION FROM MEDICAL FACULTY.

November 6, 1917.

Dr. William F. Southard,
President Board of Trustees,
College of Physicians and Surgeons,
San Francisco, California.

Dear Doctor:

I hereby tender my resignation as Professor of Nervous and Mental Diseases in the College of Physicians and Surgeons, San Francisco.

I am prompted in this action by the condition of the college. The standing which this college now holds is regrettable to the extreme. I feel that in order to secure recognition as a reputable college that it will be necessary for the college to conform with the demands of the council of medical education of the A. M. A.

I furthermore feel that inefficiency permeates the whole teaching and executive staff, and in order to secure proper organization I think it advisable that the members of the faculty resign, thereby relieving your board of any embarrassment which might otherwise be present in such reorganization.

Should you completely reorganize in conformity with the request stated and which reorganization would meet the approval of the Government and the council of education of the A. M. A., then you are at liberty to invite me to again occupy the chair of Nervous and Mental Diseases should you so wish.

I trust that you will not misconstrue my motive in thus resigning, for I have the welfare of the students at heart, which students I feel should receive as thorough a medical education as is possible to give them.

With my best personal wishes to you, and wishing you every success in a reorganization of the college, which I trust will take place, I am,

Very truly yours,
OTTO G. FREYERMUTH.

(After this letter was submitted for publication, Dr. Southard was asked for any comments he wished to offer. His letter follows:)

To the Editor:

In reply to your favor of the 9th inst., I will simply say that Dr. Freyermuth's resignation was requested for the good of the medical school. I have no comments to make at this time, as the plan of reorganization is now in the hands of the board of trustees and faculty of the College of Physicians and Surgeons.

Very truly yours,
W. F. SOUTHARD.

San Francisco, Nov. 12, 1917.

(A copy of Dr. Southard's letter was submitted to Dr. Freyermuth, whose reply follows:)

To the Editor:

Yours of the 13th inst. with a copy of the letter of Dr. W. F. Southard just at hand. In reply will state that neither directly nor indirectly, at any time or place, has my resignation from the faculty of the Physicians and Surgeons College been officially demanded, requested or even suggested.

On the contrary, on November 5th I personally informed Dr. Southard that I could no longer remain with the College. Yet, he requested me not to resign until the A. M. A. had given the College

their rating; also, on November 10th I received the following letter:

"San Francisco, Nov. 10, 1917.

"Otto Freyermuth, M. D.,
"Phelan Bldg.

"My dear Doctor:

"Your letter came duly to hand and I have placed it before the Board of Trustees, who will act upon it in a few days.

"Very truly yours,
"W. F. SOUTHARD."

I have great respect for Dr. Southard and cannot convince myself that he was instrumental in dictating the letter to you.

I was prompted to resign from the faculty not because of any animus or personalities, but rather as a protest against the appalling inefficiency of the entire institution. I have the interest of the students at heart and certainly hope that some means may be employed whereby the students and the graduates who have been drafted into the army, out of the College, may be permitted to continue their studies.

I am sorry that any personalities have entered into the controversy. I am,

Yours very truly,
OTTO G. FREYERMUTH.

San Francisco, Nov. 15, 1917.

MEDICAL CERTIFICATE TO ESCAPE DRAFT.

To the Editor:—I am inclosing you a copy of a certificate which to-day was handed to one of the doctors serving on Exemption Board No. 1, in San Francisco. In view of the fact that this man was passed as being physically qualified for military service, is it possible that we have made a mistake, when so eminent authority as Dr. Ericius Remedy Co. have given this man a certificate "at possibly so much per," stating he is suffering from such a serious complaint?

Yours truly,
W. A. CLARK, M. D.

Oakland, Cal., September 19, 1917.

"DR. ERICIUS REMEDY CO.

"New York, June 13, 1917.

"To Whom It May Concern: That Mr. O. E. Olson of 407 Tehama street, San Francisco, Cal., who has been in our care since February 8th this year, suffers from PHLEGMONOUS ENTERITIS, and upon this ground is unable to do military service of any kind, which probably will make his condition worse, is hereby affirmed.

"DR. ERICIUS REMEDY CO.
("Signed) Per E. A. Son.
"Physician in charge Dr. Max Lawrence Polowe,
"319 Sixth street, New York City."

(Note—A copy of this certificate was sent to the secretary of the New York State Board of Medical Examiners, with a request for information about the Dr. Ericius Remedy Company. An excerpt from the secretary's reply follows.)

"To the Editor:—This case again emphasizes the need for adequate legislation governing the practice of unethical physicians. Dr. Max L. Polowe, who signs himself as physician in charge of the Dr. Ericius Remedy Company, was graduated from the University and Bellevue Hospital Medical College, an excellent institution, in 1903, and passed the medical licensing examination of this State in 1904. He is, therefore, legally entitled to practice until such time as he shall have been convicted of violations of the law of the State. It is only upon such grounds as this that the license of a physician is revoked. As you will see, this leaves the broad question of advertising and ethical behavior on the part of physicians in the control of the various local and county medical societies. It has been the opinion of the officers of the State Medical Society and of the body of men in the State service who administer the laws controlling professional education and practice that the control of the ethical behavior of physicians should be in the hands of the medical profession. It is evident, however, from years of practical trial that such control is imperfect and inadequate, and I believe in the near future legislative action will be taken to reach such physicians as are willing to cast ethical procedure aside and prostitute their profession for financial gain.

"W. J. DENNO, M. D.

"Albany, N. Y., October 15, 1917."

OUR INDICTMENT OF GERMANY.

By THOMAS W. GREGORY,
Attorney-General of the United States.

The German Government began this war by a contemptuous breach of its formally plighted faith made in solemn treaty, and from the beginning until now has more than made good this ominous earnest of its intention and temper. The President has shown us how one by one, as opportunity offered, the safeguards which civilization has been able during the centuries to throw around neutrals and the non-fighting people of warring nations, were ruthlessly torn down; how patient and long-suffering remonstrance and request were met by fair words, and fairer promises made only to be broken.

We all know as but sober fact, plainly stated, that the Imperial Government has allowed no rule of war, no principle of civilization, no consideration of humanity, no teaching of Christianity to stand between it and the working out of its illegal purposes. For half a century that Government has schemed and prepared to dominate the world by "blood and iron." For half a century the officials of the Imperial Government, from the Kaiser down, including even the teachers of their children, have prostituted the minds of their youth until the whole people has been led to a toleration, if not approval, of the hideous outrages and barbarities practiced by that Government in this war. While yet we were neutral, struggling to keep free from the conflict, the representatives of that Government in this country planned to destroy our factories and our railroads, forged our public papers, deceived us when convenient, violated our hospitality and our sovereignty, while they plotted against our territorial integrity; they deliberately and with malice and affronting forewarning drowned our helpless women and babes, and declared a public holiday that their own innocent children might celebrate the murder.

They have bombarded unfortified towns and bombed the unprotected homes of their foes, taking their toll of wounded and dead from the aged and infirm, the young and the helpless. They have made barren desert of the garden spots of the earth; they have needlessly pillaged and wilfully burned towns; they have reduced to slavery men, women and children; they have wrecked and torn asunder families with a system diabolical in its efficiency; they have wantonly defiled and destroyed the temples of God. They have done all of these things that they might strike terror into the hearts of men so as more easily to conquer and rule them.

As the war has gone on, the ultimate aim of the Imperial Government has become more and more clear. Drunk with the sense of its own power and its asserted superiority, it has proposed to secure a dominating position for itself and for its system over the entire world. Nowhere yielding to the people their rightful powers, and

everywhere seeking to uphold autocracy and despotism, it has shown its intention to perpetuate absolute government of which it admittedly is the head and front. Its "kultur" is avowed to be the acme of human goodness and endeavor, and is to boast the rulership of the world, gained by force and arms.

The world must fight to preserve itself. Of this there can be no doubt.

Heretofore, save in rare cases, war has been a fight between armies; but this war, because of the initial preparation for it by an autocracy which prostituted a whole mighty nation to its purpose is a contest between peoples themselves. It is correspondingly intense and relentless. The march of events shows that it is now a war of systems—kings against peoples. If our enemy win, kings will dominate the world, because no democracy fights with or for them. The Prussian autocrat and the brutal Turk will impose upon us their wills, tell us what we may do, what we may not do, and the horrors and atrocities of Belgium and Armenia leave no doubt what this means. "Government of the people, by the people, and for the people will perish from the earth." In this sense this is truly a war of absolute and complete extermination not of peoples, but of systems, and so far as human sight can pierce the future the life of the one system or the other waits on the result.

Thus our own very life came to be bound up in the outcome of this war long before we entered it, and even years before the war broke. To the man of vision it is as clear as sunlight that the aim and the plan of the Imperial Government was and is to conquer the world, nation by nation. It was first to defeat France and Russia, next to dominate Great Britain, and with Europe at its feet to turn to America. "Kultur" and the German sword were to rule around the world. We have been thus forced by the Imperial Government itself to choose whether, in addition to suffering outrage and plunder, we should calmly wait to be crushed ourselves in due time and at the pleasure of the royal will, or should make common cause with those who already fought for us as well as for themselves, to the end that autocratic domination over all mankind should not come to pass.

With all this before them, Congress, the chosen representatives of the people, exercising their constitutional duty and with a realizing sense of their great responsibility, announced in joint resolution "that the state of war between the United States and the Imperial German Government which has been thrust upon the United States is hereby formally declared," and that "to bring the conflict to a successful termination all the resources of the country are hereby pledged."

This is our promise to those we help, our warning and threat to those we fight. Our own fair name is bound up in this pledge. Our honor demands that it be met to the full measure. From the time Congress and the President thus spoke for us it became the duty, moral and legal, of each of us to abate nothing that lay within his power to make our pledge good. Whatever our views, whatever our sympathies theretofore had been, the quarrel was now our quarrel, and we must be true to it in order to be true to ourselves. That this meant that some of us must break with the cherished memories, with friends, home and kindred, cannot matter. So broke our fathers, who gave us our liberties; so must we break to preserve them. The man who is unwilling to make that sacrifice is unworthy the liberties he enjoys and is unwelcome in our midst. The sovereign people of the United States have willed that our every available resource of men and industry must play its part in winning this war, and no head is too high or too low to wish to escape the heavy hand of our sovereign necessity.

Military News

NEW NAVAL SURGEONS.

The following-named California physicians have qualified, among others, for appointment as Assistant Surgeons, U. S. N., and will be duly commissioned as Lieutenants, junior grade, in the regular corps, by the President: Carlton L. Andrus, Harold P. Hare, James E. Harvey, Warren D. Horner, Edward F. Mullally, Daniel W. Sooy.

The following have received temporary appointments as Assistant Surgeons, U. S. N., to be transferred to permanent places as vacancies occur: James E. Miller, Edward F. Stadtherr. In all 174 physicians were examined at the last regular examination, held in various parts of the United States. Of these 93, or 53.5 per cent., qualified, while 81, or 46.5 per cent., failed, either professionally or physically.

Resolution adopted unanimously by the Clinical Congress of Surgeons of North America, at Chicago, October 25, 1917:

Whereas, The experiences of the nation convince us of the necessity for universal military training, to furnish qualified men for defense, to strengthen manhood and mental poise, and to make for a more efficient citizenship; and

Whereas, We believe it will democratize youth and furnish discipline, while developing physical force and endurance, and will produce better fathers and workers for the ranks of peace; therefore, be it

Resolved, That the Clinical Congress of Surgeons, at its eighth annual session, urges upon Congress at its coming session the passage of a measure along the general lines of the Chamberlain bill for universal military training, and that the cantonments now used by the national army be utilized, if possible, for such work.

ADVISORY MEDICAL BOARDS.

At a recent meeting of the Trustees of the American Medical Association it was proposed to establish well-equipped laboratories throughout the State to be manned by men of well-known professional ability in all the specialties; to have these act as centers for the examination of conscripts where there is a dispute as to their capacity to serve in the Army and Navy. Apparently, conditions have arisen where the District Examining Boards have not been able to settle disputed questions. These advisory medical boards are instituted to solve this problem. Careful physical examination and laboratory findings will be recorded and the results of this work will be presented to the District Examining Boards. This will permit a more just ruling in cases of questionable judgment, and it is to be hoped that it will give the conscript a fairer consideration and at the same time weed out those few cases where citizens attempt to evade the national call to arms.

REHABILITATION OF CRIPPLES.

A communication has been received from the Surgeon-General, asking that the physicians of California assist in collecting data concerning the rehabilitation of cripples who have overcome their disability and have taken up successful occupations following their loss. It is desired that men of this type should write a little biography, giving in detail their earning capacity before their injury, the means employed to restore their loss of function, the re-education which was necessary to adapt themselves to their new activities, the type of work they do at present, and the comparative earning capacity subsequent to the loss of limb or member. The writer need not sign his name, but all such communications will ultimately find their way to the Surgeon-General's office.

PUBLICATION COMMITTEE MEETING.

A meeting of the Publication Committee was held on November 5th, and the editor was empowered to refuse all manuscripts for the next few months, this radical measure being made necessary by the crowded condition of the Journal and the large number of manuscripts on hand. Various routine items were also taken up.

Notices

TO OFFICERS OF THE MEDICAL RESERVE CORPS, U. S. ARMY INACTIVE LIST.

Word received from the Surgeon-General of the U. S. Army conveys the information to officers of the Medical Reserve Corps of the United States Army, inactive list, that assignment to active duty may be delayed, and that they are advised to continue their civilian activities, pending receipt of orders. They will be given at least fifteen days' notice when services are required.

STENOGRAPHERS AND TYPEWRITERS WANTED.

The United States Government is in urgent need of thousands of typewriter operators and stenographers. All who pass examinations for the departments and offices at Washington, D. C., are assured of certification for appointment. Women especially are urged to undertake this office work. Those who have not the required training are encouraged to undergo instruction at once. The entrance salary ranges from $1000 to $1200 a year. Advancement of capable employes to higher salaries is reasonably rapid. Applicants must have reached their eighteenth birthday on the date of the examination. For full information in regard to the scope and character of the examination, and for application blanks, address the U. S. Civil service Commission, Washington, D. C., or the Secretary of the U. S. Civil Service Board of Examiners.

State Board of Health

NOVEMBER MEETING.

The regular monthly meeting of the State Board of Health was held in Sacramento on November 3, 1917, and was attended by Dr. George E. Ebright, president, and Drs. Fred F. Gundrum, Edward F. Glaser, Adelaide Brown, Robert A. Peers and Wilbur A. Sawyer.

On the request of Prof. C. A. Kofoid, Consulting Biologist, increased funds were allowed for the expenses of the Division of Biology in the eradication of hookworm from the mines and in other lines of work.

The board instructed the secretary to communicate with the Mayor of San Francisco that the anti-vivisection ordinance pending before the Board of Supervisors would be in conflict with the work of the State Board of Health in protecting the health of the public.

By resolution of the Board Dr. Wilfred H. Kellogg, director of the Bureau of Communicable Diseases, was authorized to accept the position of director of the Red Cross Laboratory Car, which position carries no salary, on condition that his duties will not call him outside the state.

One nurse was granted a certificate as a registered nurse through reciprocity.

Owing to the large number of nurses applying for registration, and in response to requests from training schools for nurses, the board decided that examinations of nurses for registration should be held three times a year—in February, June and October—instead of twice a year, as heretofore.

County Boards of Plumbers were appointed, each consisting of a physician, a master plumber, and a journeyman plumber, as required by the new state law for the registration of plumbers.

On the recommendation of the director of the Bureau of Sanitary Engineering, four temporary permits were granted for the operation of swimming pools. Permits were granted to Redwood City to dispose of the sewage of part of the city and of the Christofferson Aircraft Manufacturing Company into Steinberger Creek; to the City of Long Beach to dispose of the effluent of the Reinsch-Wurl screen into the Pacific Ocean, and to the City of Gustine to dispose of sewage on land.

A permit was granted to the San Fernando Mission Land Company to supply water to the City of San Fernando from wells.

The attorney of the board, Mr. Kemper B. Campbell, reported that the case brought by Cozak against Inspector Oakley of the Bureau of Foods and Drugs, had been dismissed on the request of the attorney for Cozak.

Hearings were held in the food and drug cases set for this day, and many cases were referred to District Attorneys for prosecution.

W. A. SAWYER, Secretary.

PROTECTING SOLDIERS FROM VENEREAL DISEASES.

Dr. H. G. Irvine, director of the newly established Bureau of Venereal Diseases of the California State Board of Health, conferred with Surgeon-General Gorgas and Major W. F. Snow, who has charge of venereal disease control in the Army. As a result of this conference, the Bureau is placed in close contact with the War Department in its widespread work of safeguarding the health of our soldiers. California is recognized by the War Department as the first State to establish a bureau for taking direct and positive action in the control of venereal diseases. A definite policy in the control of venereal diseases among soldiers and sailors has been established by the Army and Navy. With the co-operation of states, counties and cities excellent results may be expected. It is an acknowledged fact that the most serious health problems in modern armies are those relating to the venereal diseases. Every army of Europe has suffered immensely because large numbers of their men have been incapacitated by venereal diseases. To win the war our men must be fit, and California cannot send men infected with venereal diseases to the front.

Regulations for Control of Venereal Diseases.

1. All city, county and other local health officers are, for the purpose of the control and suppression of venereal diseases, hereby designated and appointed inspectors, without salary, of the State Board of Health of California, under the provisions of Section 2979 of the Political Code.

2. All city, county and other local health officers are hereby directed to use every available means to ascertain the existence of, and immediately to investigate, all suspected cases of syphilis in the infectious stages and gonococcus infection within their several territorial jurisdictions, and to ascertain the sources of such infections.

3. In such investigations said health officers are hereby vested with full powers of inspection, examination, isolation and disinfection of all persons, places and things as in said statute provided, and as such inspectors said local health officers are hereby directed:

(a) To make examinations of persons reasonably suspected of having syphilis in the infectious stages or gonococcus infection. (Owing to the prevalence of such diseases among prostitutes all such persons may be considered within the above class.)

(b) To isolate such persons whenever, in the opinion of said local health officer the State Board

of Health or its secretary, isolation is necessary to protect the public health. In establishing isolation the health officer shall define the limits of the area in which the person reasonably suspected or known to have syphilis or gonococcus infections, and his immediate attendant, are to be isolated, and no persons other than the attending physicians shall enter or leave the area of isolation without the permission of the health officer.

(c) In making examinations and inspections of women for the purpose of ascertaining the existence of syphilis or gonococcus infection, to appoint women physicians for said purposes where the services of a woman physician are requested or demanded by the person examined.

(d) In cases of quarantine or isolation, not to terminate said quarantine or isolation until the cases have become non-infectious or until permission has been given by the State Board of Health or its secretary.

Cases of gonococcus infection are to be regarded as infectious until at least two successive smears, taken not less than forty-eight hours apart, fail to show gonococci.

Cases of syphilis shall be regarded as infectious until all lesions of the skin or mucous membranes are completely healed.

(e) Inasmuch as prostitution is the most prolific source of syphilis and gonococcus infection, all health officers are directed to use every proper means of suppressing the same, and not to issue certificates of freedom from venereal diseases, as such certificates may be used for purposes of solicitation.

(f) To keep all records pertaining to said inspections and examinations in files not open to public inspection, and to make every reasonable effort to keep secret the identity of those affected by venereal disease control measures, as far as may be consistent with the protection of the public health.

State Board of Medical Examiners

At the annual meeting of the Board of Medical Examiners of the State of California, held in Sacramento, October 15th, the following officers were elected for the ensuing year: P. T. Phillips, M. D., Santa Cruz, president; H. V. Brown, M. D., Los Angeles, vice-president; C. B. Pinkham, M. D., San Francisco, secretary-treasurer. The terms of the following members of the board expired and new commissions of reappointment were issued, dated October 15, 1917: Dr. P. T. Phillips, Santa Cruz; Dr. Dain L. Tasker, Los Angeles; Dr. Charles B. Pinkham, San Francisco.

Report on osteopathic licentiates who have taken the oral, practical or clinical examination for a physician's and surgeon's certificate, Sec. 12½, Chapter 81, Statutes 1917. Examined in Los Angeles, October 9th to 11th, inclusive, at October meeting of board: Passed, 16; failed, 11; total examined, 27. Examined November 1st, in Oakland, by a commission of four members of the board: Passed, 4; failed, 2; total examined, 6. Examined in Los Angeles by a commission of four members of the board; two examinations held subsequent to the October meeting: First examination—Passed, 0; failed, 6; total examined, 6. Second examination: Passed, 2; failed, 3; total examined, 11. Total A. B. applications filed for October meeting, 52. Results to date: passed, 22; percentage, 50; failed, 22; percentage, 50; total, 44. Reported as examined to date, 44; not acted upon, 8.

The report of the commission will be filed at the next meeting of the board, and a vote thereon will be necessary to ratify the issuance of all certificates other than to those who were "passed" at the regular October meeting.

At the next meeting oral examination will be given to applicants of this class who have filed the required fee for re-examination or who have filed applications since the closing date for the October meeting.

Prosecution of Illegal Practitioners.

Experience has proved that the expense of conducting the legal department of the Board of Medical Examiners has been a heavy drain on the finances, yet as long as violations exist the board is called upon to discourage such violation and the procedure incident thereto demands a considerable financial expenditure. A complexity of circumstances renders the details relative to the enforcement of the penalty of violation of the medical act most difficult, and at the same time most expensive. The indifferent support by the medical fraternity in a specific section of the State renders prosecution work most difficult and a heavy drain on the finance of the board is the natural sequence. Let us follow the steps incident to the investigation and prosecution in a specific section of the State from which emanates a number of communications complaining of the alleged violation on the part of some specific individual.

We will presume that the local prosecuting forces are indifferent, while in the same locality the representative practitioners of those who hold valid certificates are restrained by **logical reasons** from arousing an antagonistic feeling by openly appearing as an interested party in the proceedings. Presuming, as is invariably the case, that no evidence is volunteered, it then becomes necessary to send a special investigator to the locality who must depend on local operators to secure evidence. This evidence, it is held, must be in the nature of actual diagnosis, treatment or the writing of a prescription for which a fee is paid in the presence of a witness. The evidence having been secured, a complaint is filed. Then follows an interval prior to the hearing which when set, is subject to continuances in the police or justice court, where final disposition may be effected either by dismissal, a plea of guilty and payment of fine, or by the violator being held to answer to the superior court. In the latter instance there follows another period of delay until the case is finally tried. Estimate the expense to the Board providing the investigators are called upon to journey to the location of trial, particularly if remote, each time a case is set and then continued for hearing at a later date. Judge for yourselves the expense in witness fees, which the Board must pay the operators, for the expenses in 90 per cent. of the cases exceeds whatever fine may be imposed, while in many other cases no fine is imposed, the judgment imposed by the court being probation with the understanding that the violator refrain from further violation. Another discouraging outgrowth of legal procedure which operates against the success of the Board, as a result of a series of continuance extending over a considerable period is the possibility of the disappearance of the witnesses who not infrequently leave the jurisdiction of the court during the many weeks that frequently elapse between the date of arrest and first trial, thus effecting a dismissal of a case from lack of sufficient evidence.

The prescribed confines of the prosecution activities of Attorney Ward in northern California lie in the prosecution of violations in the counties of San Francisco, Alameda, or in the town of San Rafael, while Attorney John Hart represents the Board in prosecution for violations in and about Los Angeles. When violators are reported in other localities it frequently becomes necessary to engage counsel to act as special prosecutor for the Board, providing the local authorities are either indifferent or have their offices too crowded with other matters. The engagement of special counsel can only be effected by obtaining the consent of the Attorney-General of the State of California. Such consent is possible only on satisfactory showing of existing local conditions such as have been mentioned, and when obtained the Board must then arrange with such local attorney as may be selected the

fee to be paid for service. The established schedule of fees for the service of special prosecutors is the payment of $10.00 on swearing to the complaint and 25 per cent. of such fine as may be imposed. The latter fee is payable when the fine imposed is deposited in the State Treasury to the credit of the Board of Medical Examiners. If no fine is imposed a fee of $25.00 is paid to carry the case through the Superior Court.

Chapter 81, Statutes 1917, provide for the retention of 25 per cent. of the fine by the county where the conviction is effected and will be an added stimulus to this work of discouraging violations of the act. Realizing the constantly increasing financial drain incident to investigation and enforcement, as well as the heavy expenditure in issuing a directory, the Board determined that every certificate holder would willingly pay the tax of $2.00 imposed under Sec. 2, Chapter 8 (Statutes 1917), thus effectively assisting the Board in the enforcement of the law.

We hear frequent comments from individual licentiates or discussions among groups of those holding certificates entitling them to practice some system of the healing art in California, the underlying thought being that the principle whereby the Board assumes the police power in enforcing obedience to the regulations of the medical act, is fundamentally wrong. The argument is advanced that the function of the Board of Medical Examiners should be limited to the regulation of preliminary medical and professional education in so far as it pertains to the investigation and standardization of such teaching institutions as qualify applicants for the Board's certificate, the regulation of the examination for such certificates, the issuance of the certificate and the penalizing of those certificate holders who may be guilty of any crime involving moral turpitude as defined in the act.

Perchance you say the District Attorneys should prosecute these violators, but here again we face a problem—lack of funds to investigate, with perchance local contingencies which mitigate against a successful issue.

The Board has other difficulties in the prosecution of violators,—in one instance the Board prosecuted a certain violator in two counties, but owing to popular sentiment could not secure a conviction in either county; the District Attorney in one of these counties shortly after the trial wherein he appeared as prosecutor, came to the office of the Board accompanied by the violator interceding in an endeavor to secure a certificate for the individual he had just prosecuted. Another interesting instance was where a certain Justice of the Peace imposed a fine and accepted payment thereon in installments.

The indifference to medical regulation exhibited by the average practitioner, his lack of familiarity with the essential features of the medical act under which his practice is conducted, his failure to affiliate with the local state and national society, are factors which render most arduous the biennial legislative struggle on the part of those who support reasonable standards of education, qualification and licensure. The quacks and charlatans constantly work for a minimum educational equipment, allowing a maximum scope of practice, and perpetuate a constantly developing publicity campaign which, in the absence of an opposition campaign, will eventually effect a dissolution of all standards of education and licensure.

In the operation of the State Board the unfamiliarity of certificate holders to the provisions of the acts is frequently evidenced particularly in the instance of those who, having lost the certificates issued to them, may locate in a county other than that where such certificate has been recorded. By failure to record their certificate prior to practice, they not only violate section 15, but also may lose their professional rights in civil procedure, specifically in cases involving the attempt to collect a fee for professional services. In the city of San Francisco, investigation discloses a large percentage of licentiates who, having lost their certificates by the fire of 1906, which also destroyed the records of the County Clerk, have neglected to provide themselves through the office of the Board of Medical Examiners, with a duplicate certificate. By failure to record such duplicate certificate with the County Clerk, the practitioners in question have not only inadvertently become technical violators, but in addition thereto have jeopardized their rights in civil action. The medical act further provides that the practice under any name other than that appearing on the certificate originally issued, is a violation, hence those who through marriage or other process of law, have assumed and are practicing under another name than the one appearing on the certificate originally issued, are technically violating section 18.

Perfunctory consideration of matters pertaining to medical education, licensure and regulation engenders the thought so often expressed—of what value is all this red tape and technicality? As concrete examples of its value, your attention is directed to the instance of a certain applicant for written examination who, having been admitted to a written examination in his statement that his diploma had been lost after having been placed in a mail box, failed to furnish satisfactory evidence of the possession of the same, and later correspondence disclosed that no one by that name had graduated from the institution. Instances of the issuance of fraudulent diplomas are frequent and at the present time there is pending before the Board a reciprocity application which was accompanied by a diploma issued in a foreign country, a duplicate of which was offered the secretary, provided he forwarded a money order for $2.50. The applicant claims to have lost the original diploma evidencing the degree of M. D. However, the difficulties experienced by another state in substantiating the authenticity of the credentials claimed by this individual, engender a strong presumption that California cannot consider the evidence submitted as sufficiently satisfactory to warrant the issuance of a certificate.

New Members

Ide, Chas. E., Redlands.
Whiting, Sandford, Los Angeles.
Poket, Mary B., Tehama.
Whitney, E. W., San Diego.
Erkenbeck, J. W., San Diego.
Gottbrath, N. J., San Francisco.
Jones, Wendell A., Arlington.

Transferred

Crabtree, Hezediah T., San Francisco.
Bartlett, Edwin I., San Francisco.

Deaths

Ermentrout, Dr. S. Justina, of Eldridge, Cal.; graduate of Woman's Medical College, Penn., '91, University of California, '13; died at her home on November 14, 1917.

Whitman, C. H., of the County Hospital, Los Angeles, has died.

Ellis, Charles Z., of Berkeley, Cal.; graduate of California Med. Coll., '91; Univer. of California, '92; died at the Roosevelt Hospital, Berkeley, on October 16, 1917.

Tartar, Albert Preston, M. D., Alameda, Cal.; University of California, San Francisco, 1882; aged 57; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of California; district surgeon to the Southern Pacific System; died at the Alameda Sanatorium, October 6th, after an operation for disease of the intestines.

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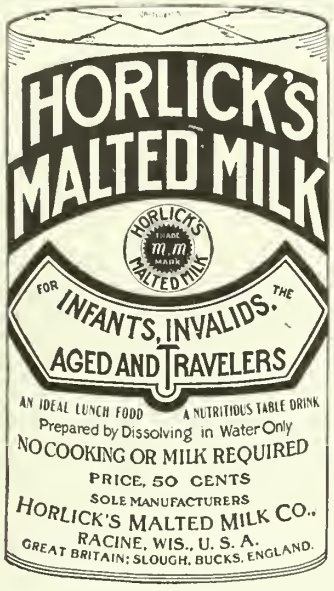

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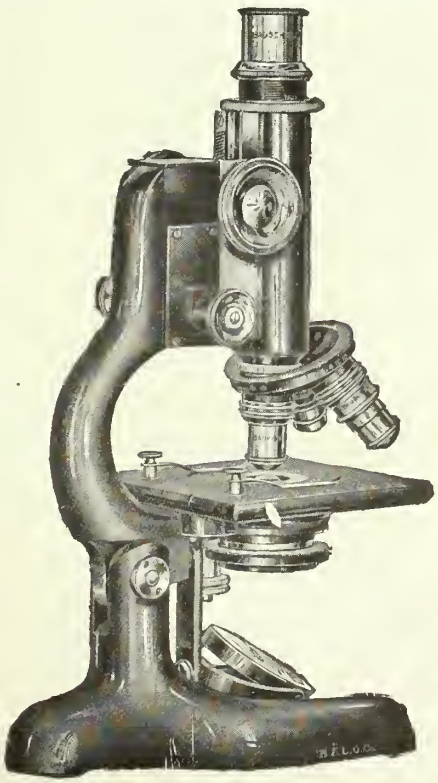

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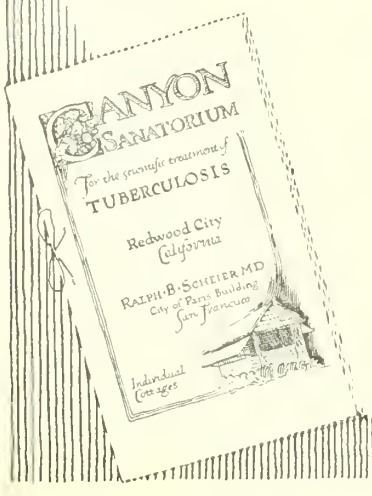

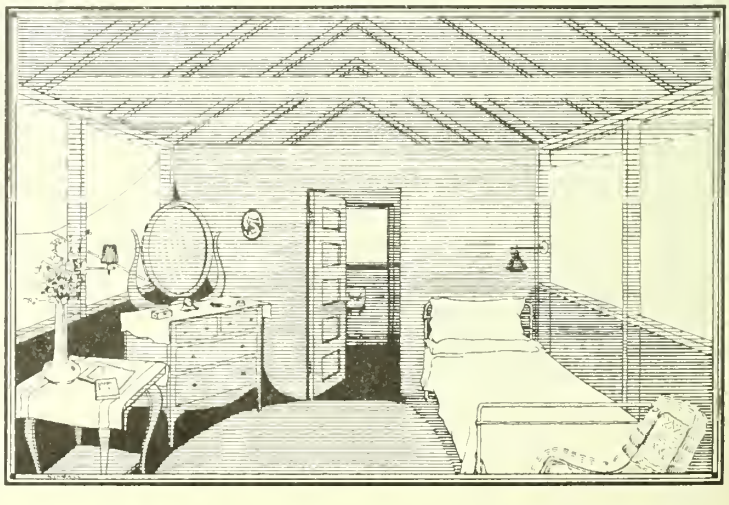

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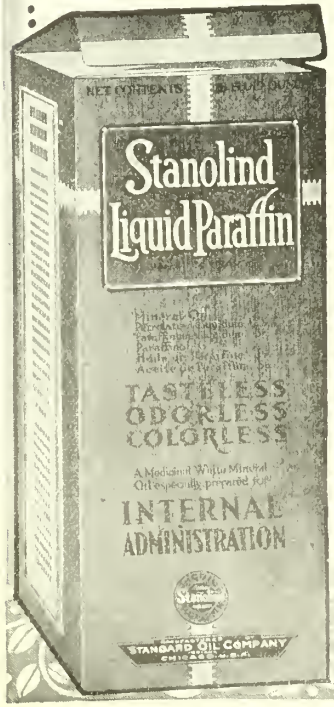

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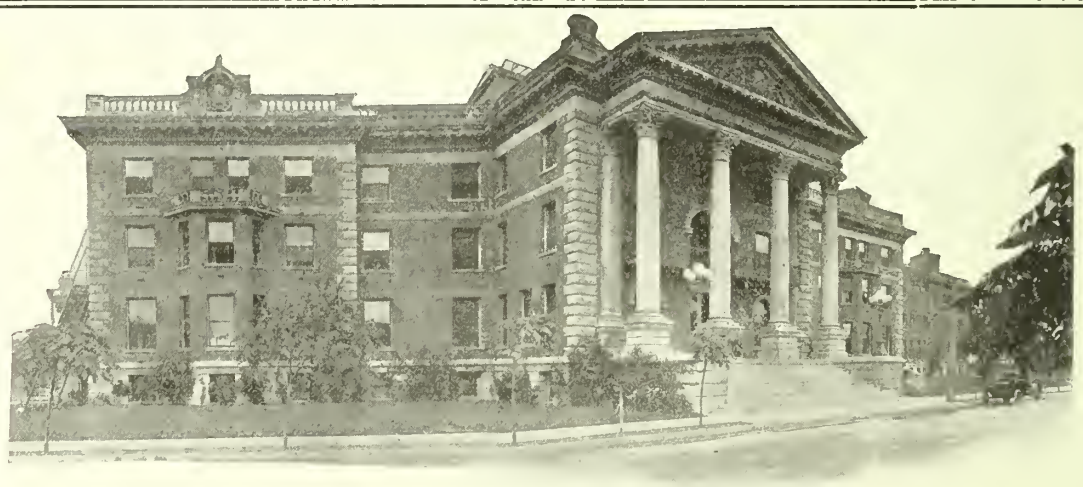

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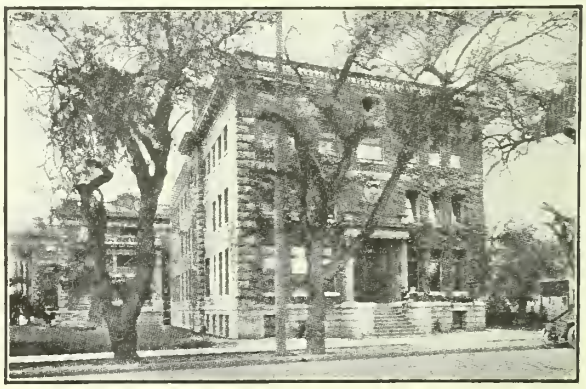

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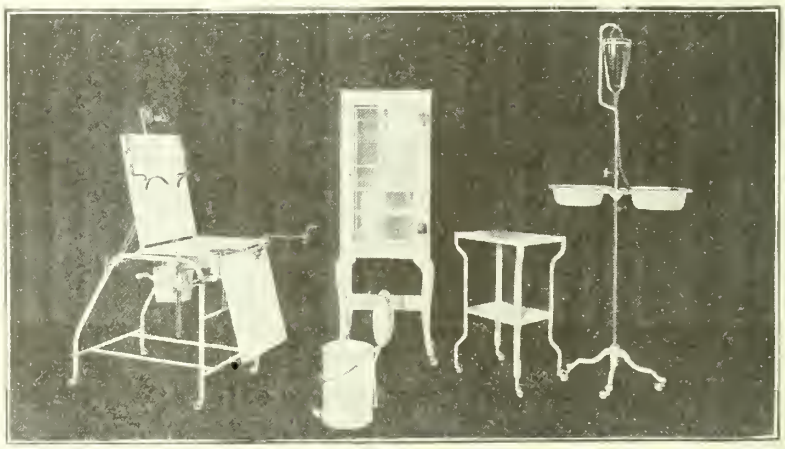

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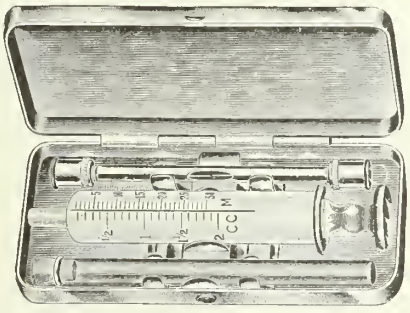

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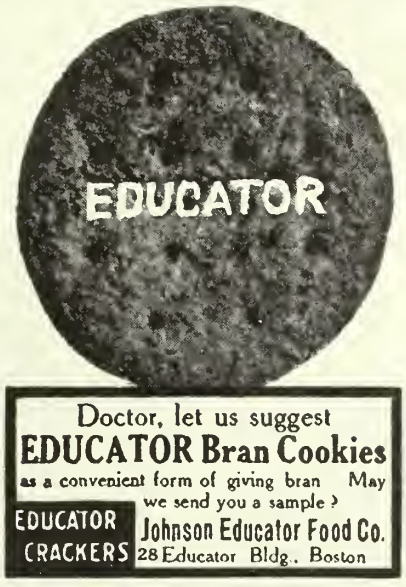
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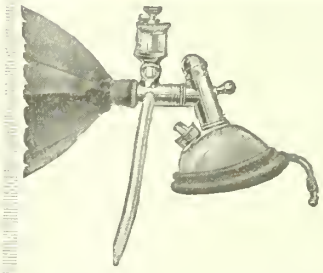

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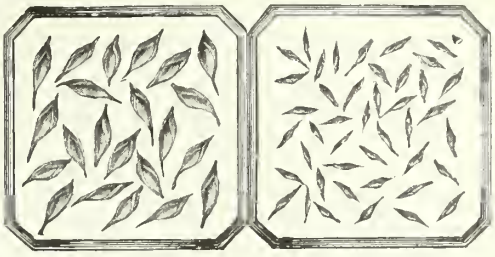

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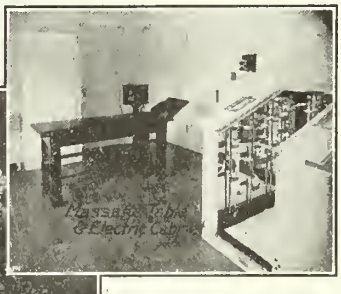

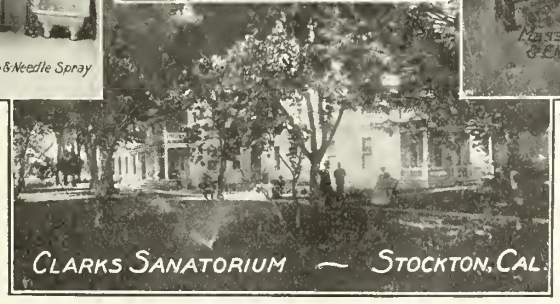

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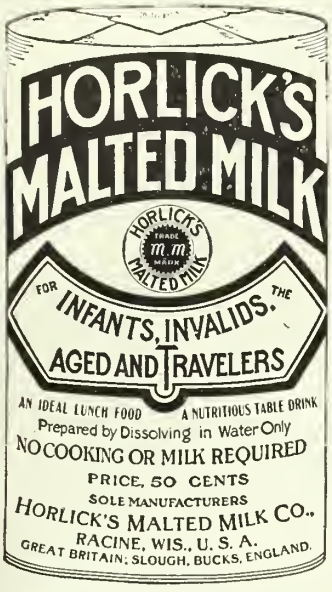

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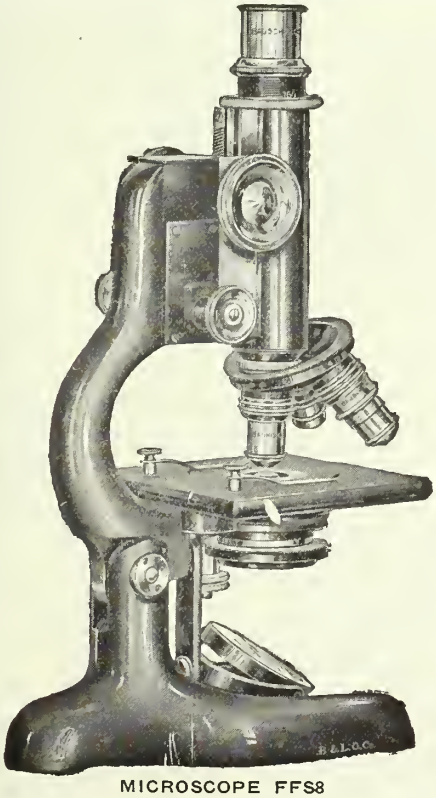

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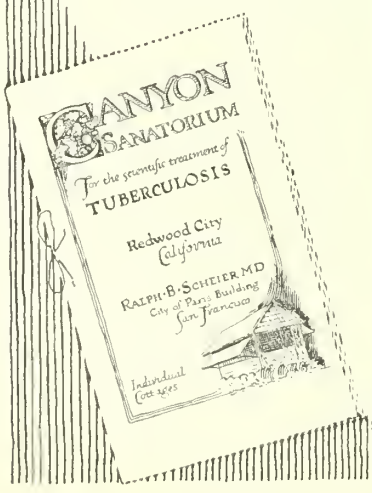

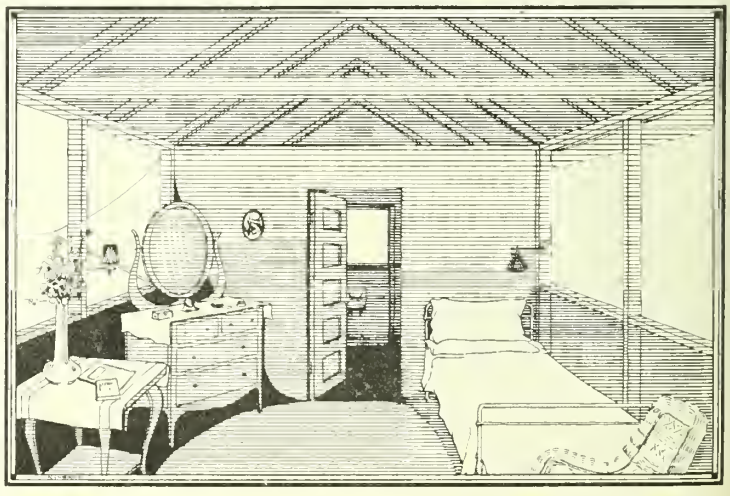

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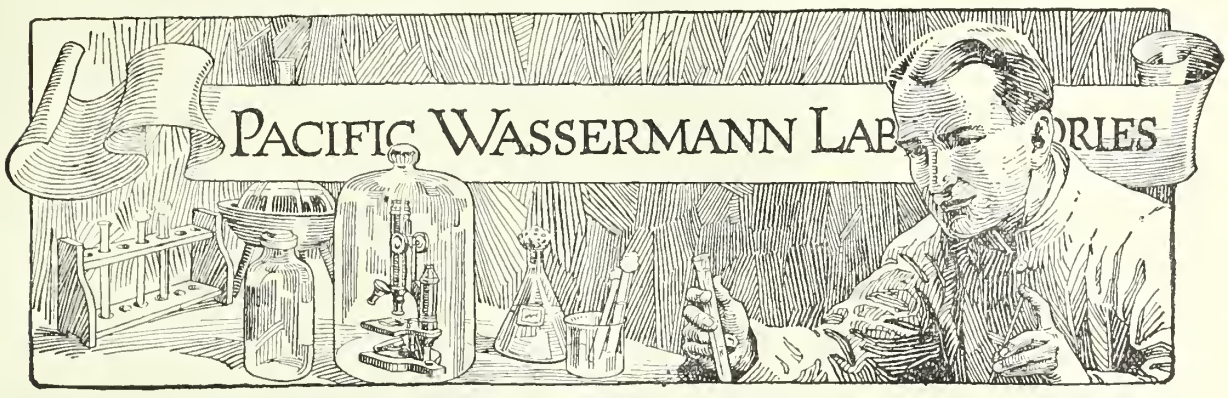

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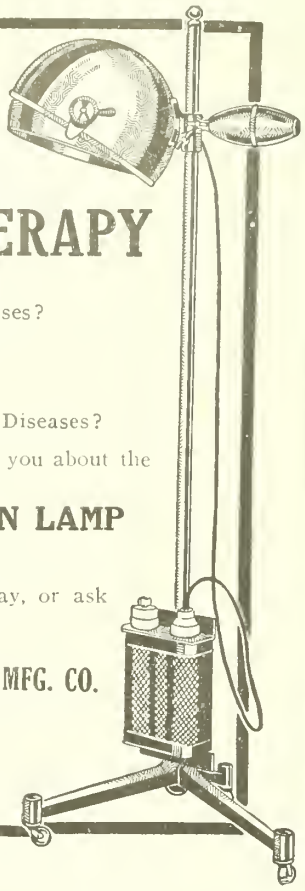

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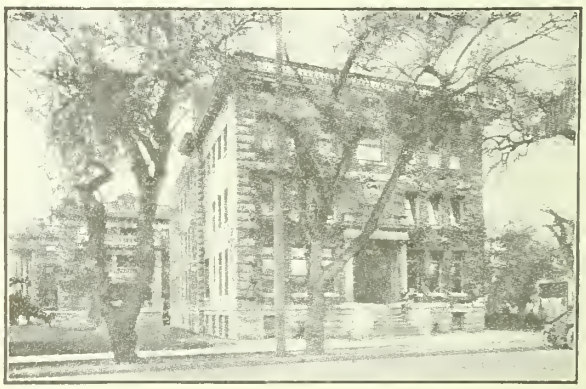

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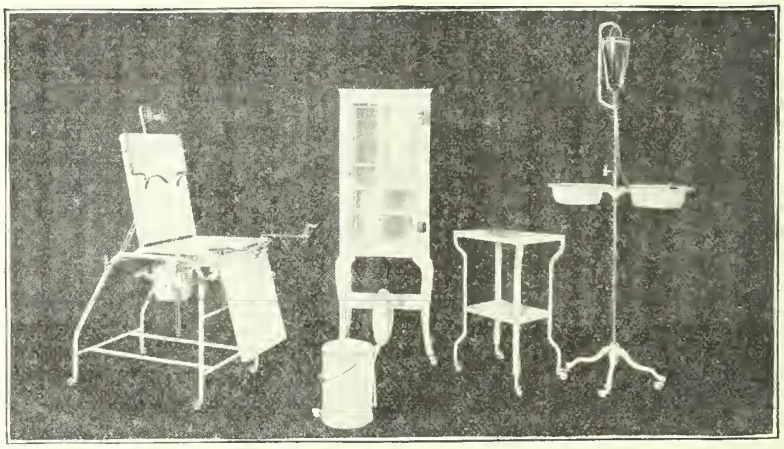

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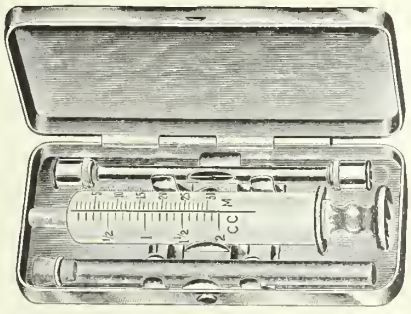

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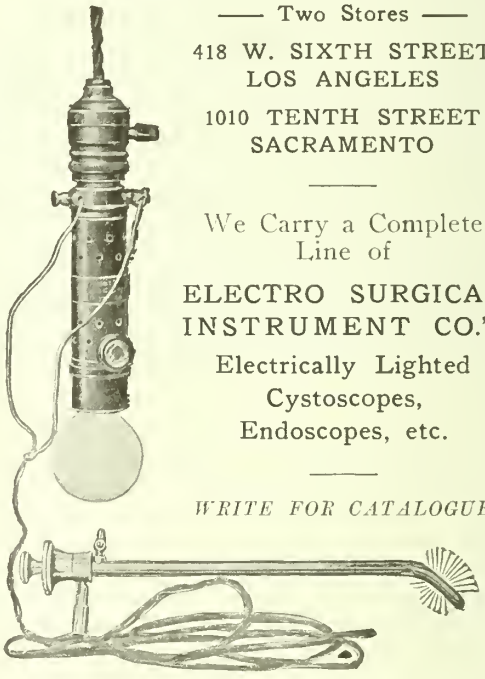

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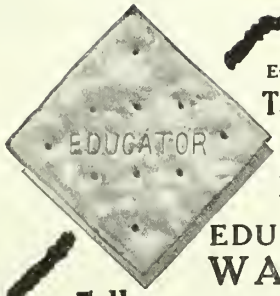

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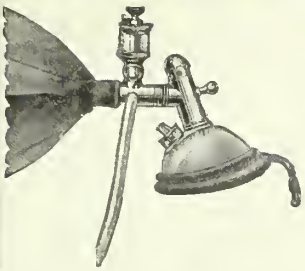

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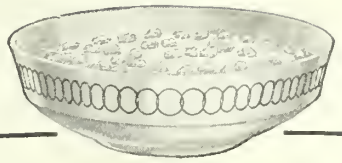

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Butte County Medical Society	Ella F. Gatchell, Chico	E. E. Baumeister, Chico	2nd Tuesday.
Contra Costa County Medical Society	U. S. Abbott, Richmond	E. B. Fitzpatrick, Martinez	2d Sunday every month.
Fresno County Medical Society	J. L. Maupin, Fresno	L. R. Wilson, Fresno	1st Tuesday.
Glenn County Medical Society	Saml. Iglick, Orland	Frank M. Lawson, Willows	
Humboldt County Medical Society	F. R. Horel, Arcata	L. A. Wing, Eureka	2d Tuesday.
Imperial County Medical Society	L. R. Moore, Imperial	L. C. House, El Centro	
Kern County Medical Society	A. I. Fraser, Bakersfield	F. J. Gundry, Bakersfield	3d Monday.
Los Angeles County Medical Society	C. N. Whitman, Los Angeles	Geo. H. Kress, Los Angeles	1st & 3d Thursday except July, Aug., Sept.
Marin County Medical Society	Leo L. Stanley, San Quentin	O. P. Stowe, Mill Valley	2d Thursday each month
Mendocino County Medical Society	Lester C. Gregory, Fort Bragg	O. H. Beckman, Fort Bragg	Meets quarterly.
Merced County Medical Society	Brett Davis, Merced	H. Kylberg, Merced	1st Thursday.
Monterey County Medical Society	H. N. Yates, Pacific Grove	W. L. Teaby, Monterey	1st Saturday.
Napa County Medical Society	Dr. E. Osborne, Napa	O. F. Schulze, Napa	1st Tuesday.
Orange County Medical Association	R. A. Cushman, Santa Ana	W. C. Dubois, Santa Ana	1st Tuesday.
Placer County Medical Society	H. T. Rooney, Colfax	Robt. A. Peers, Colfax	1st Saturday every 2d month.
Riverside County Medical Society	F. D. West, Beaumort	A. E. Strong, Riverside	2d Monday.
Sacramento Society for Medical Improvement	G. L. Stevenson, Sacramento	F. F. Gundrum, Sacramento	3d Tuesday.
San Benito County Medical Society	L. C. Hull, Hollister	F. O. Nash, Hollister	1st Monday.
San Bernardino Medical Association	P. M. Savage, San Bernardino	Carroll C. Davis, San Bernardino	1st Tuesday.
San Diego County Medical Society	John C. Yates, San Diego	A. J. Thornton, San Diego	1st and 3d Tuesdays.
San Francisco County Medical Society	C. F. Welty, San Francisco	René Bine, San Francisco	Every Tuesday.
San Joaquin County Medical Society	Fred P. Clark, Stockton	Dewey R. Powell, Stockton	4th Friday, except July and August.
San Luis Obispo County Medical Society	R. M. Bradbury, San Luis Obispo	C. J. McGovern, San Luis Obispo	1st Saturday of each month.
San Mateo County Medical Society	W. C. Baker, San Mateo	A. R. Moodie, Redwood City	1st Friday each month.
Santa Barbara County Medical Ass'n	C. S. Stoddard, Santa Barbara	R. Manning Clarke,	2d Monday.
Santa Clara County Medical Society	Chas. B. Hare, San Jose	J. A. Bacher, San Jose	3d Wednesday.
Santa Cruz County Medical Society	G. P. Tolman, Watsonville	A. N. Nittler, Davenport	1st Monday.
Shasta County Medical Society	E. J. Cornish, Dunsmuir	Ernest Dozier, Redding	Meets quarterly.
Siskiyou County Medical Society	C. W. Nutting, Etna Mills	L. R. Jones, Yreka	Meets 1st Monday each quarter.
Solano County Medical Society	I. W. Brownlie, Vallejo	Paul Reilly, Vallejo	3d Wednesday.
Sonoma County Medical Society	F. O. Pryor, Santa Rosa	W. E. Bixby, Sebastopol	1st Friday.
Stanislaus County	P. N. Jacobsen, Turlock	E. F. Reamer, Modesto	
Tehama County Medical Society	F. J. Bailey, Red Bluff	F. H. Bly, Red Bluff	
Tulare County Medical Society	A. N. Loper, Dinuba	A. W. Preston, Visalia	1st Tuesday
Tuolumne County Medical Society	C. E. Congdon, Jamestown	Wm. I. Hood Sonora	
Ventura County Medical Society	H. B. Osborn, Fillmore	R. W. Homer, Ventura	1st Monday.
Yolo County Society for Medical Improvement	H. D. Lawhead, Woodland	L. J. Beebe, Woodland	1st Tuesday except July, Aug. and Sept.
Yuba-Sutter Counties Medical Society	Allen Gray, Marysville	A. L. Miller, Marysville	Meets every 2 months

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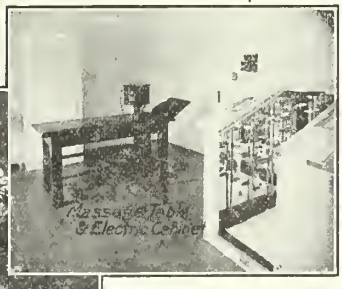

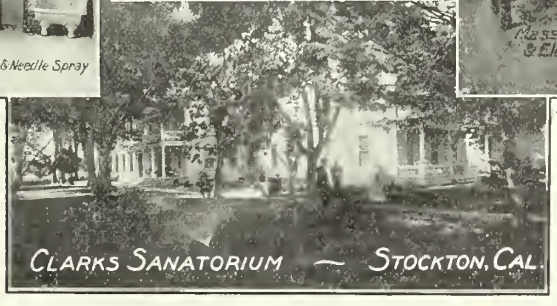

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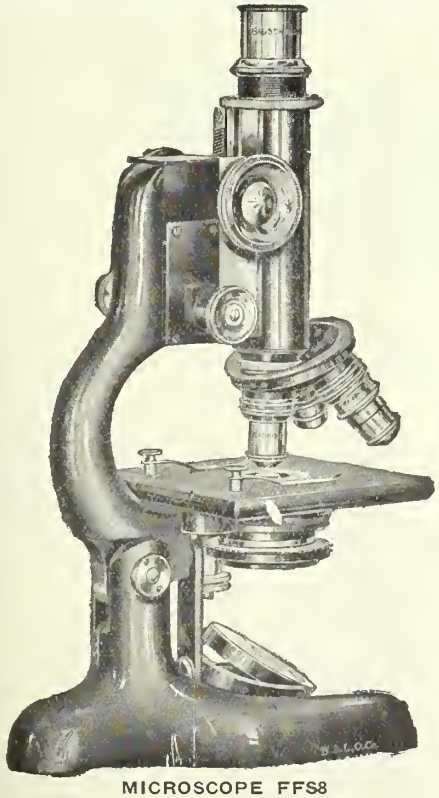

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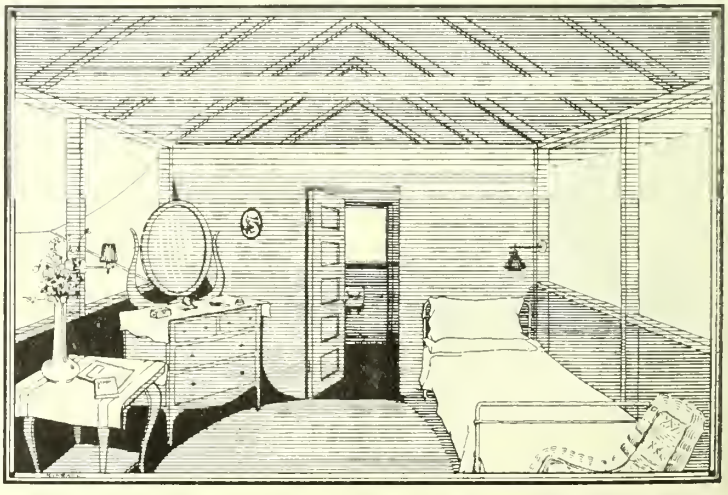

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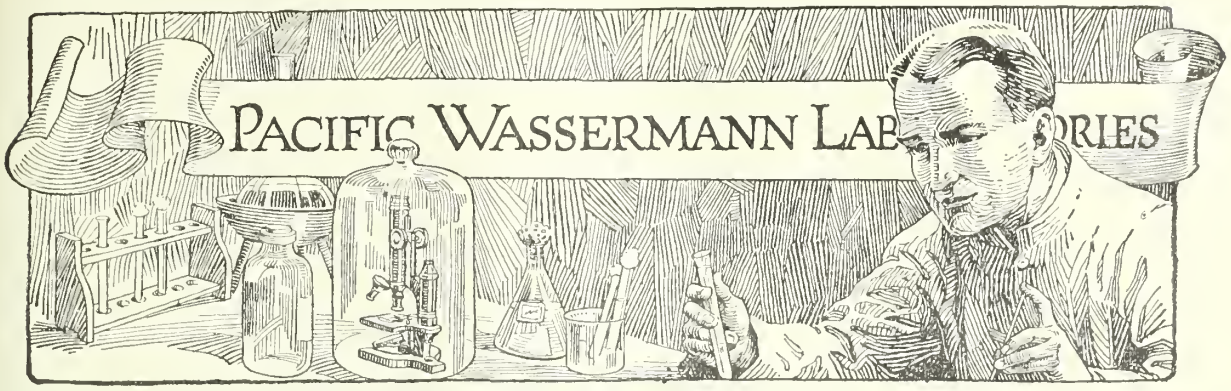

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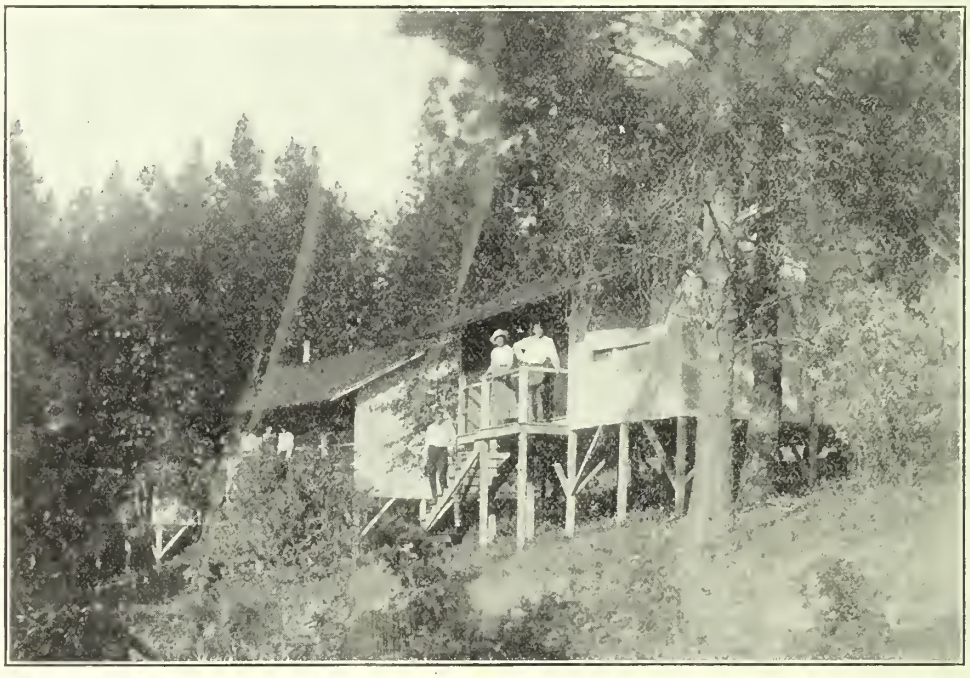

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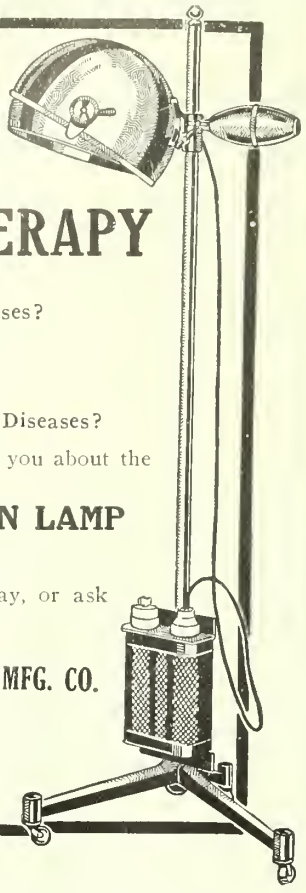

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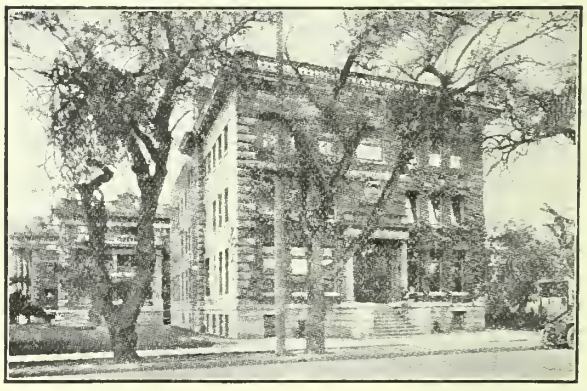

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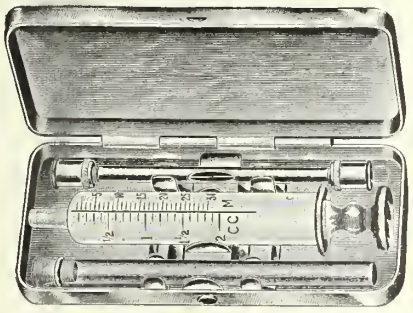

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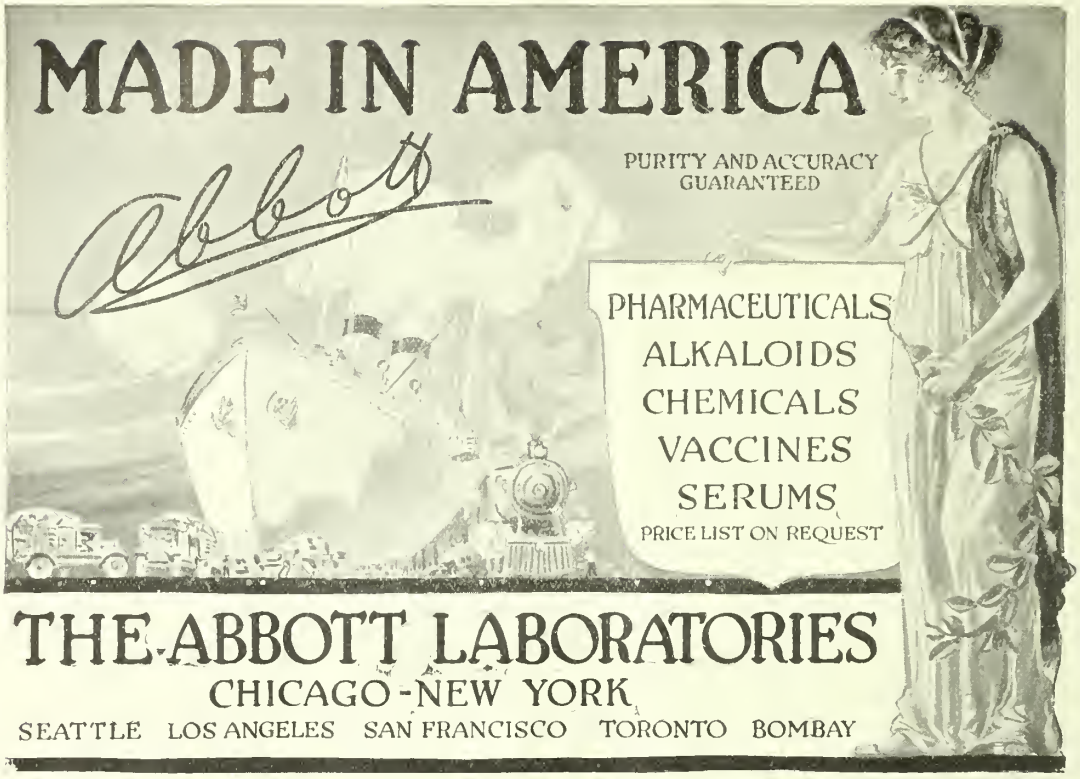

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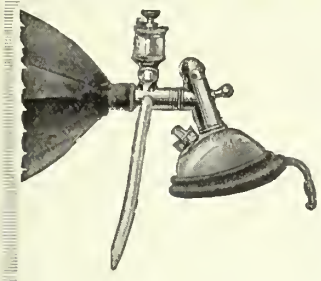

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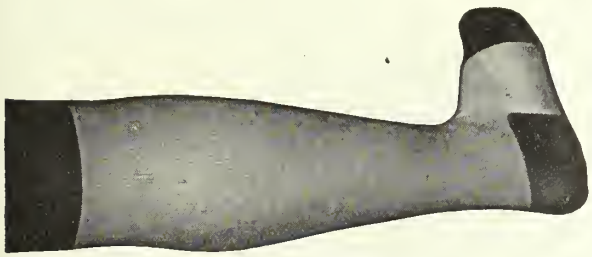

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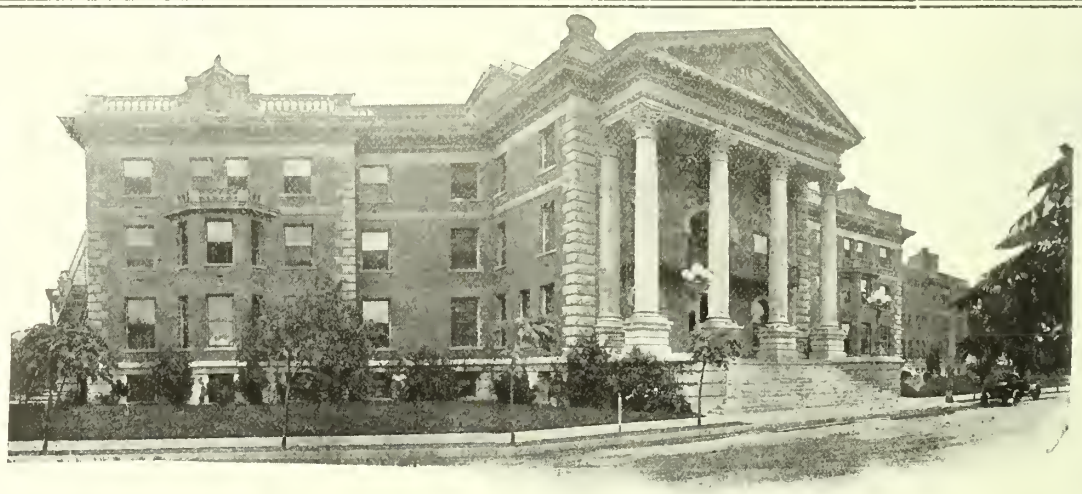

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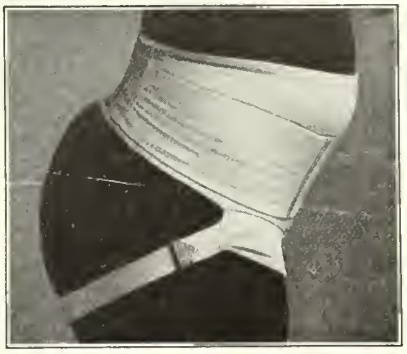

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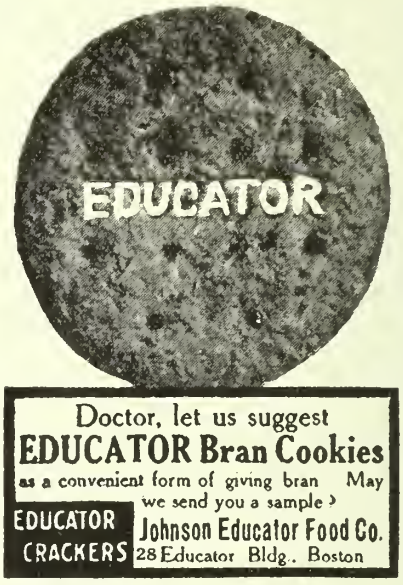
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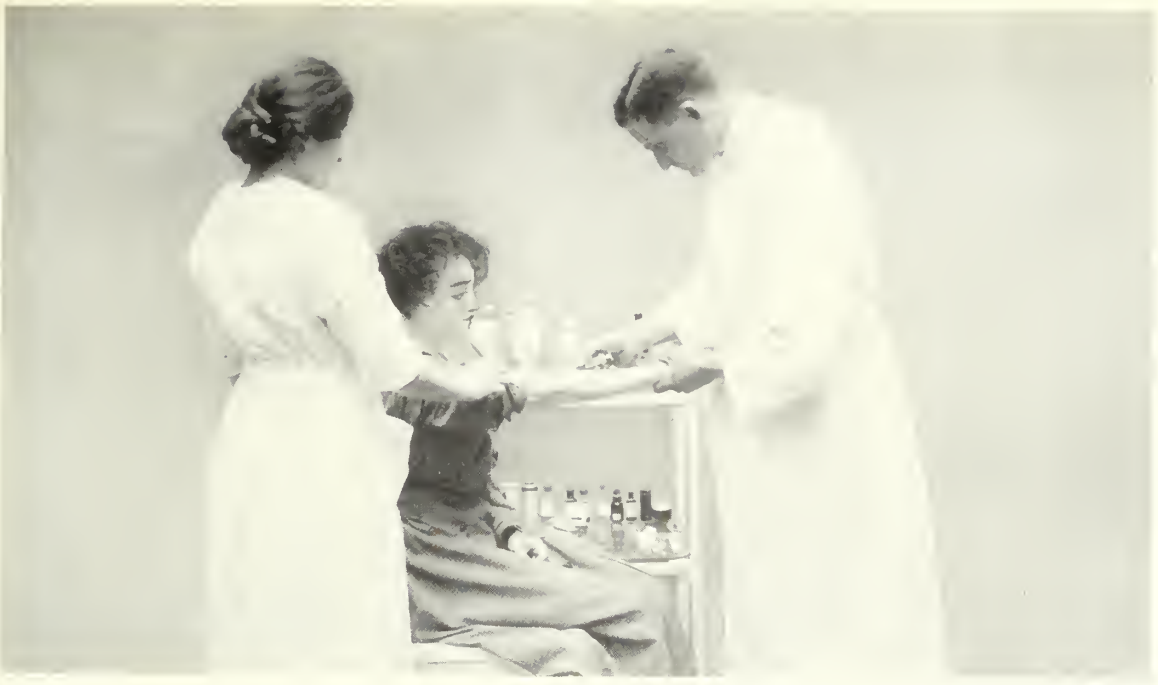

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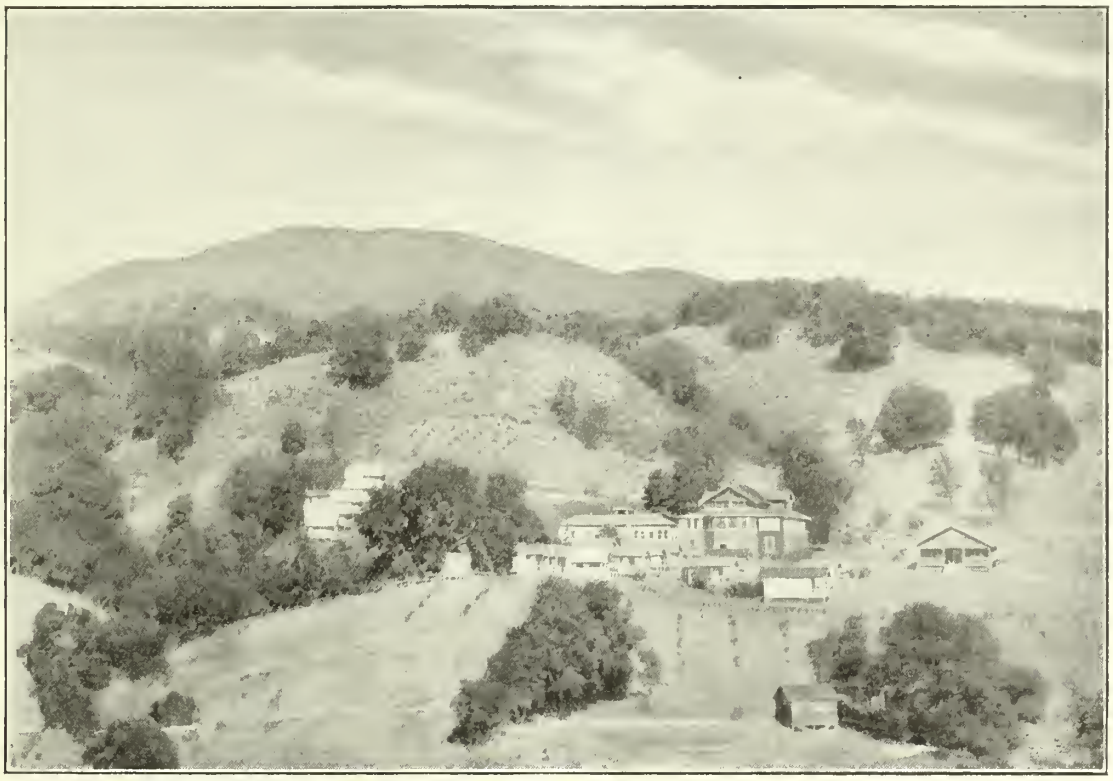

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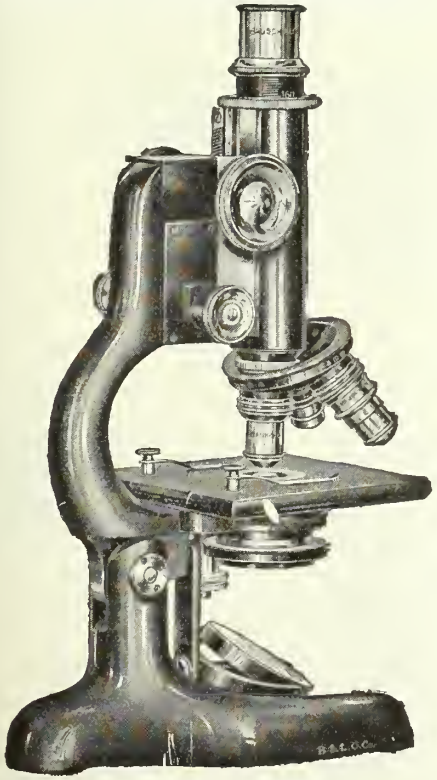

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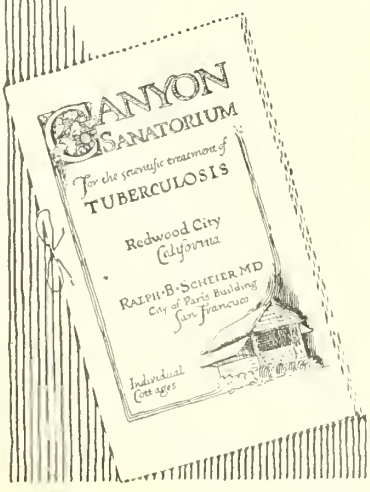

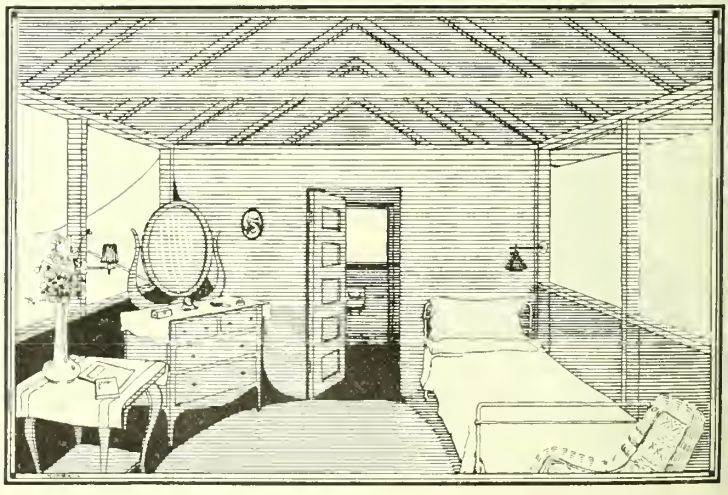

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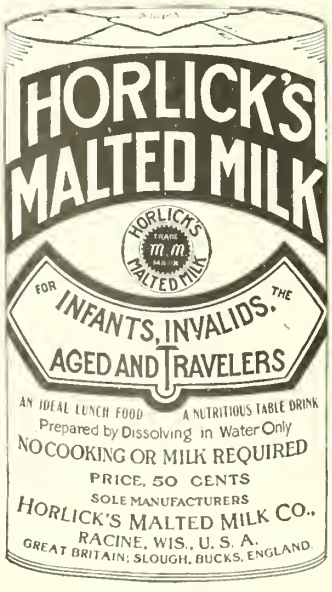

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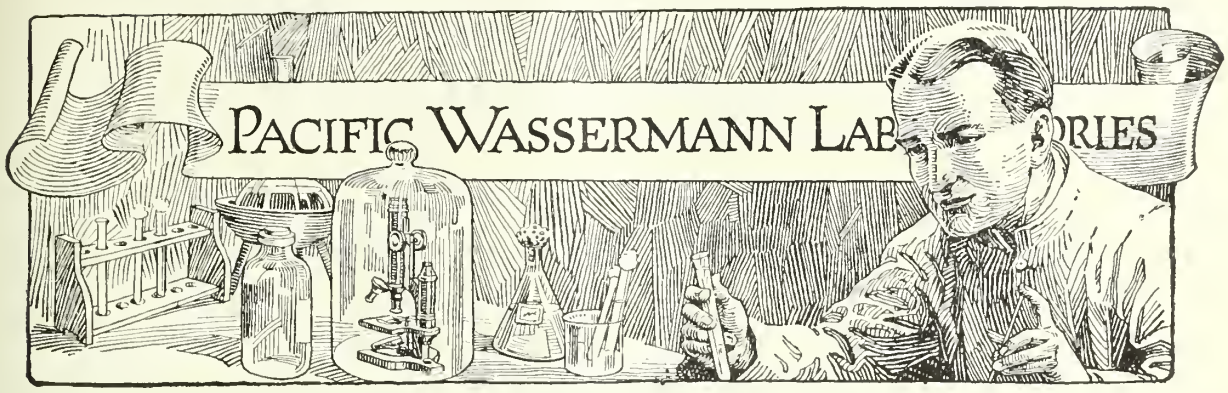

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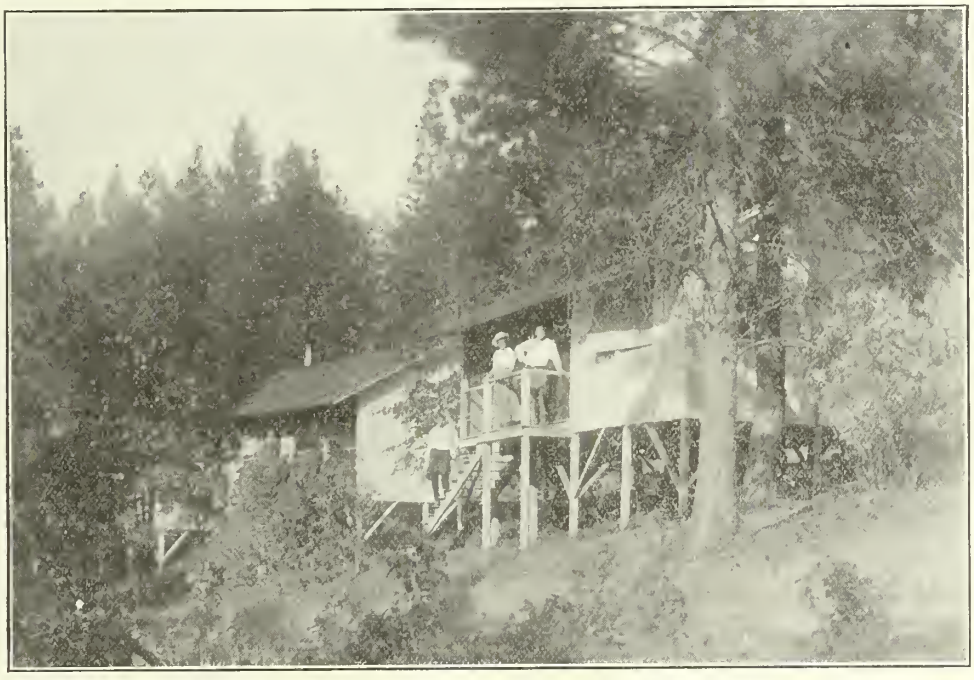

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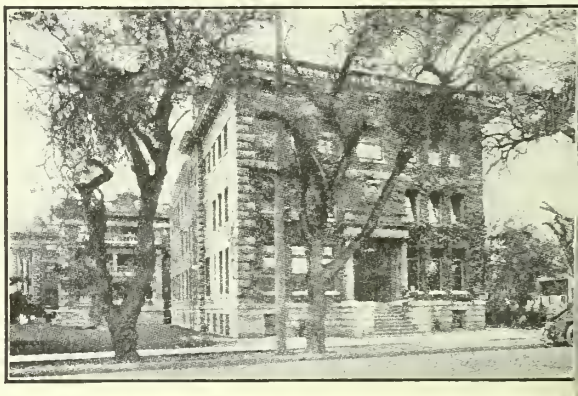

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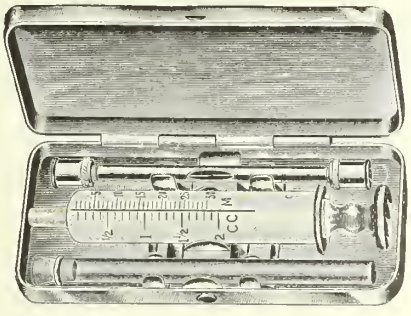

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Mendocino County Medical Society	F. C. Peirsol, Mendocino	O. H. Beckman, Fort Bragg	Meets quarterly.
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Monterey County Medical Society	H. C. Murphy, Salinas	T. C. Edwards, Salinas	1st Saturday.
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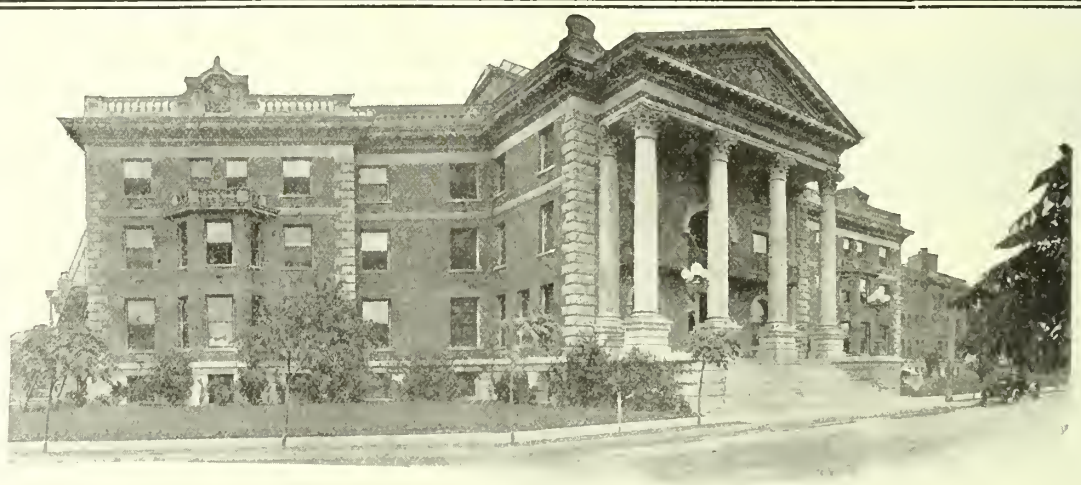

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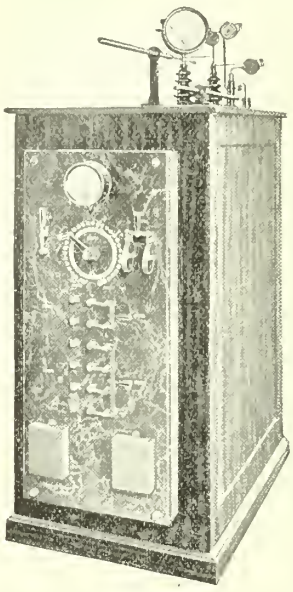

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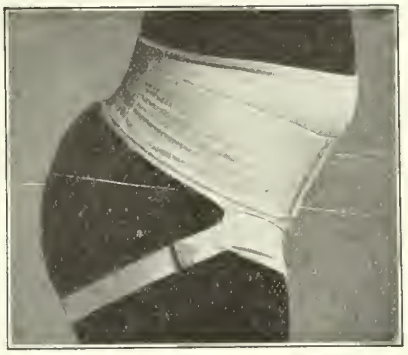

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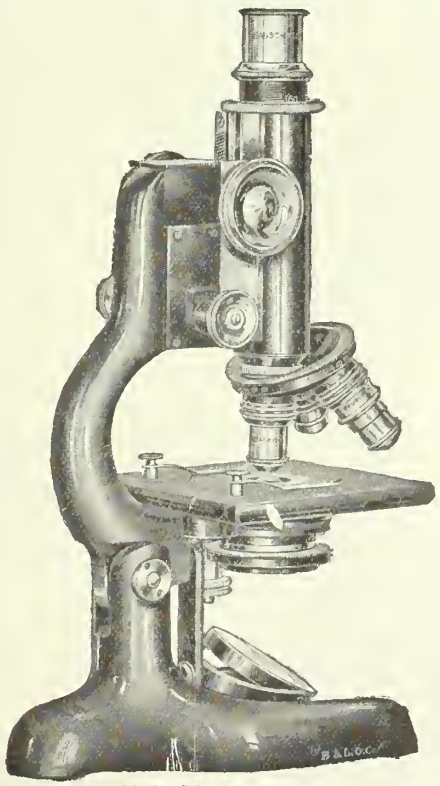

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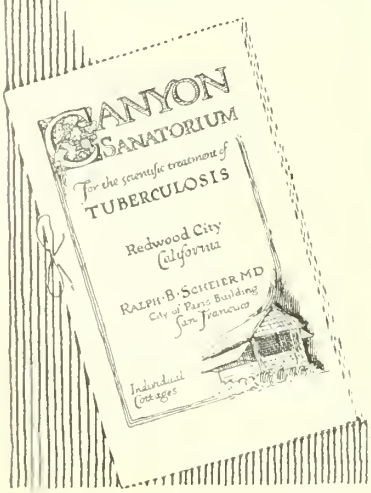

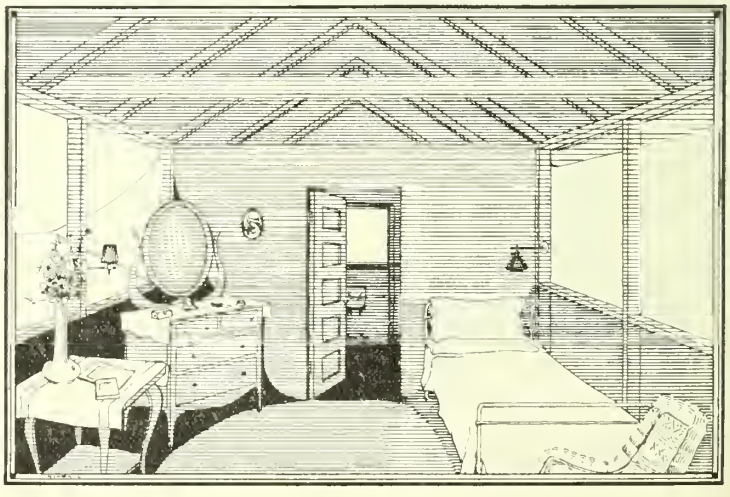

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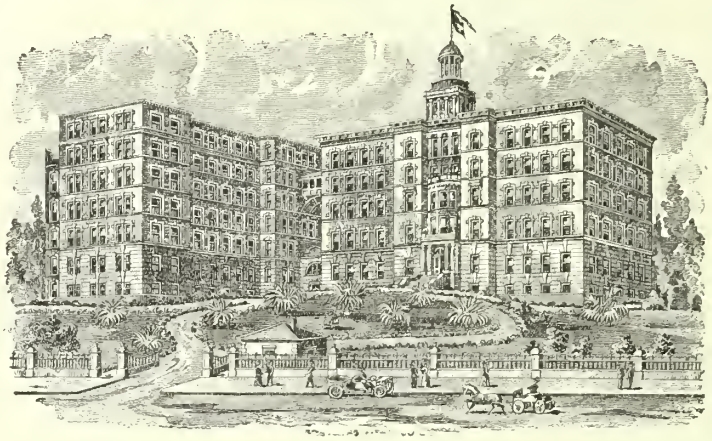

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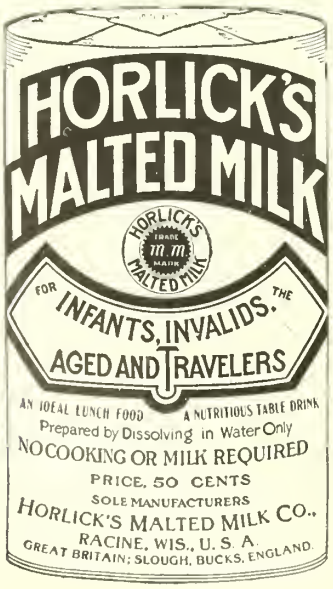

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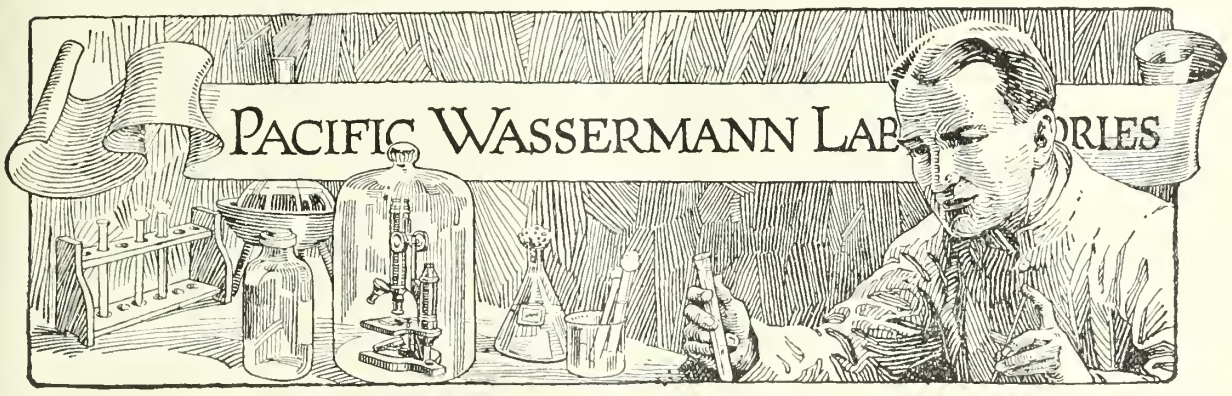

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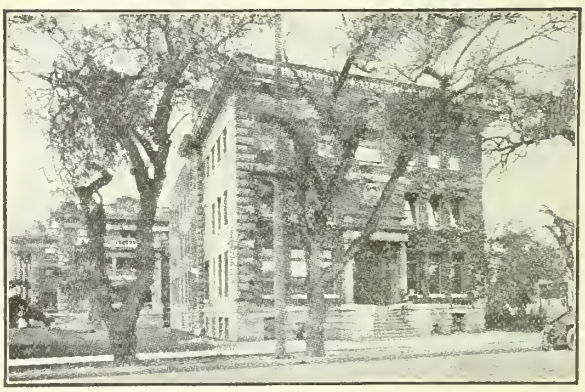

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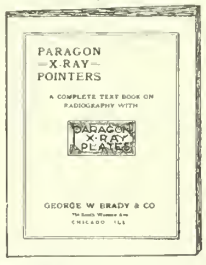

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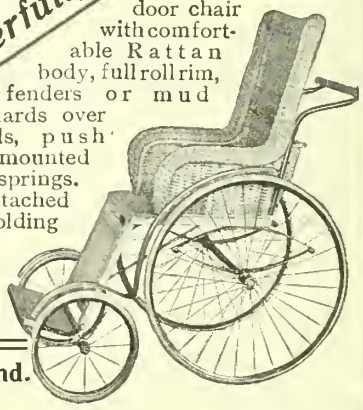

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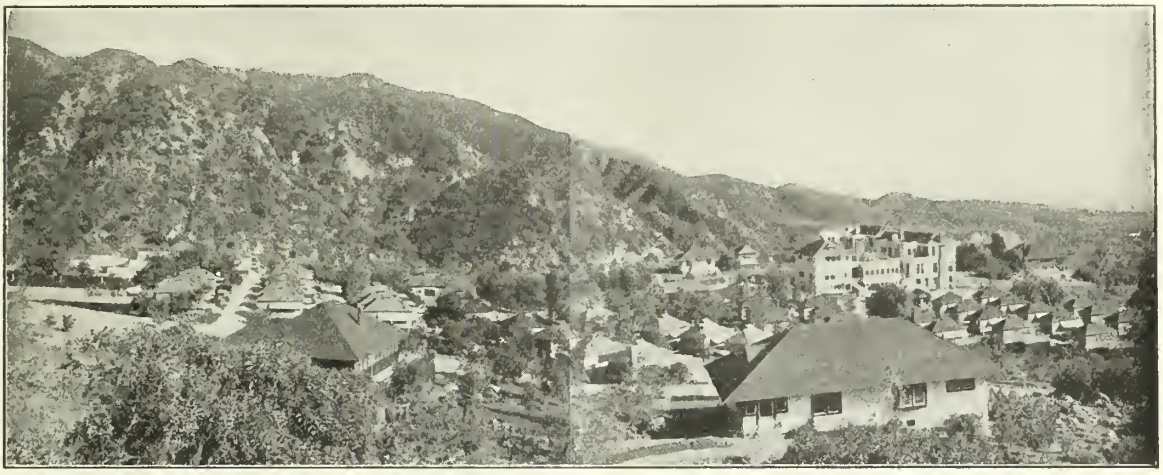

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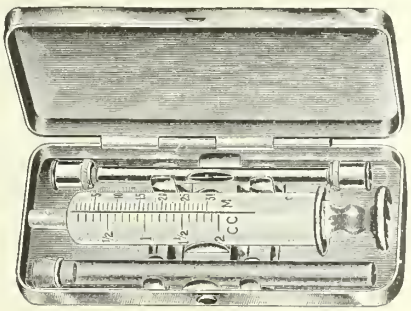

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Counties.	President.	Secretary.	Meets.
Alameda County Medical Association	R. T. Stratton, Oakland	Elmer E. Brinckerhoff, 1st Nat'l Bank Bldg	3rd Tuesday, Oakland Hotel, Oakland.
Butte County Medical Society	J. O. Chiapella, Chico	E. E. Baumeister, Chico	2nd Tuesday.
Contra Costa County Medical Society	P. C. Campbell, Richmond	U. S. Abbott, Richmond	2d Sunday every month.
Fresno County Medical Society	J. L. Maupin, Fresno	Kenneth J. Staniford, Fresno	1st Tuesday.
Glenn County Medical Society	Saml. Iglick, Orland	Frank M. Lawson, Willows	
Humboldt County Medical Society	F. R. Horel, Arcata	L. A. Wing, Eureka	2d Tuesday.
Imperial County Medical Society	L. R. Moore, Imperial	L. C. House, El Centro	
Kern County Medical Society	A. I. Fraser, Bakersfield	C. A. Morris, Bakersfield	3d Monday.
Lassen-Plumas County Medical Society		R. W. T. Garner, Susanville	
Los Angeles County Medical Society	C. C. Browning, Los Angeles	Geo. H. Kress, Los Angeles	1st & 3d Thursday except July, Aug., Sept.
Marin County Medical Society	Waid J. Stone, San Rafael	Harry O. Hund, San Rafael	2d Thursday each month
Mendocino County Medical Society	F. C. Peirsol, Mendocino	O. H. Beckman, Fort Bragg	Meets quarterly.
Merced County Medical Society	D. W. Zirker, Merced	Jay Leroy Mudd, Merced	1st Thursday.
Monterey County Medical Society	H. C. Murphy, Salinas	T. C. Edwards, Salinas	1st Saturday.
Napa County Medical Society	Dr. E. Osborne, Napa	Otto T. Schulze, Napa	1st Tuesday.
Orange County Medical Association	R. A. Cushman, Santa Ana	W. C. Dubois, Santa Ana	1st Tuesday.
Placer County Medical Society	H. T. Rooney, Colfax	Robt. A. Peers, Colfax	1st Saturday every 2d month.
Riverside County Medical Society	W. S. Davis, Corona	A. E. Strong, Riverside	2d Monday.
Sacramento Society for Medical Improvement	C. B. Jones, Sacramento	W. A. Beattie, Sacramento	3d Tuesday.
San Benito County Medical Society	L. C. Hull, Hollister	F. O. Nash, Hollister	1st Monday.
San Bernardino Medical Association	P. M. Savage, San Bernardino	Carroll C. Davis, San Bernardino	1st Tuesday.
San Diego County Medical Society	H. C. Oatman, San Diego	G. T. Courtenay, San Diego	1st and 3d Tuesdays.
San Francisco County Medical Society	A. H. Giannini, San Francisco	René Bine, San Francisco	Every Tuesday.
San Joaquin County Medical Society	C. R. Harry, Stockton	Dewey R. Powell, Stockton	4th Friday, except July and August.
San Luis Obispo County Medical Society	R. O. Dresser, Paso Robles	A. H. Wilmar, Paso Robles	1st Saturday of each month.
San Mateo County Medical Society	F. S. Gregory, Redwood City	A. R. Moodie, Redwood City	1st Friday each month.
Santa Barbara County Medical Ass'n	C. S. Stoddard, Santa Barbara	R. M. Clarke, Santa Barbara	2d Monday.
Santa Clara County Medical Society	Chas. B. Hare, San Jose	J. A. Bacher, San Jose	3d Wednesday.
Santa Cruz County Medical Society	H. E. Piper, Santa Cruz	A. N. Nittler, Davenport	1st Monday.
Shasta County Medical Society	F. Stabel, Dunsmuir	Ernest Dozier, Redding	Meets quarterly.
Siskiyou County Medical Society	C. W. Nutting, Etna Mills	L. R. Jones, Yreka	Meets 1st Monday each quarter.
Solano County Medical Society	J. W. Brownlie, Vallejo	Paul Reilly, Vallejo	3d Wednesday.
Sonoma County Medical Society	M. B. McAulay, Petaluma	Elizabeth M. Yates, Santa Rosa	1st Friday.
Stanislaus County	F. R. De Lappe, Modesto	E. F. Reamer, Modesto	
Tehama County Medical Society	F. J. Bailey, Red Bluff	F. H. Bly, Red Bluff	
Tulare County Medical Society	R. N. Fuller, Tulare	A. W. Preston, Visalia	1st Tuesday
Tuolumne County Medical Society	C. E. Congdon, Jamestown	G. C. Wrigley, Sonora	
Ventura County Medical Society	W. J. Lewis, Ventura	C. A. Jenson, Ventura	1st Monday.
Yolo County Society for Medical Improvement	H. D. Lawhead, Woodland	L. J. Beebe, Woodland	1st Tuesday, except July, Aug. and Sept.
Yuba-Sutter Counties Medical Society	Allen Gray, Marysville	A. L. Miller, Marysville	Meets every 2 months.

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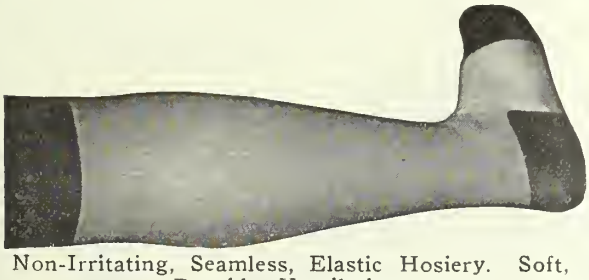

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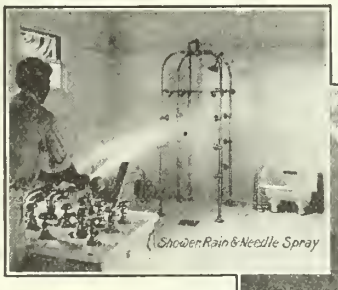

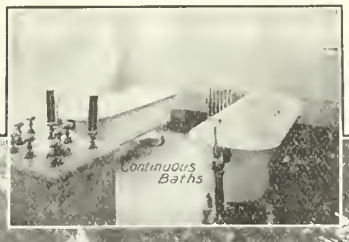

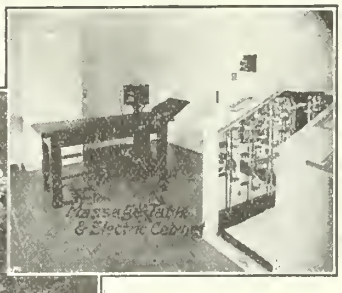

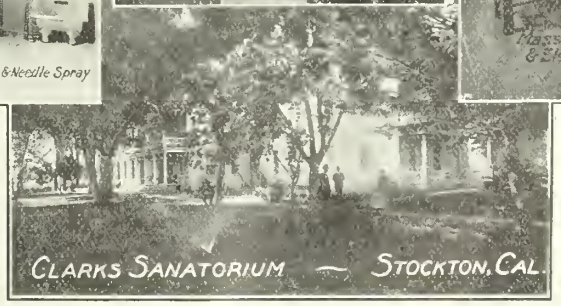

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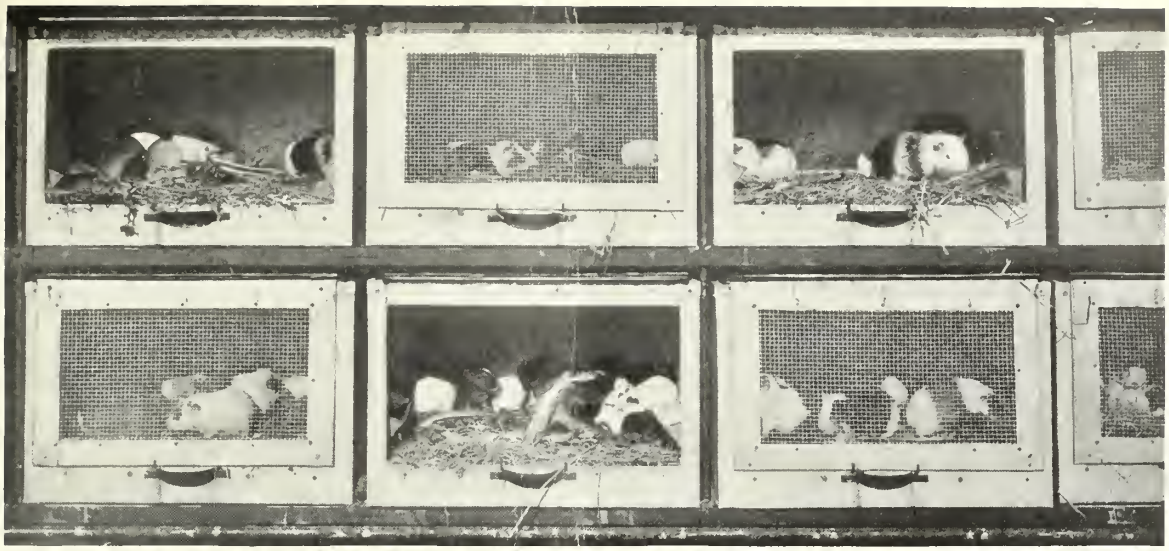

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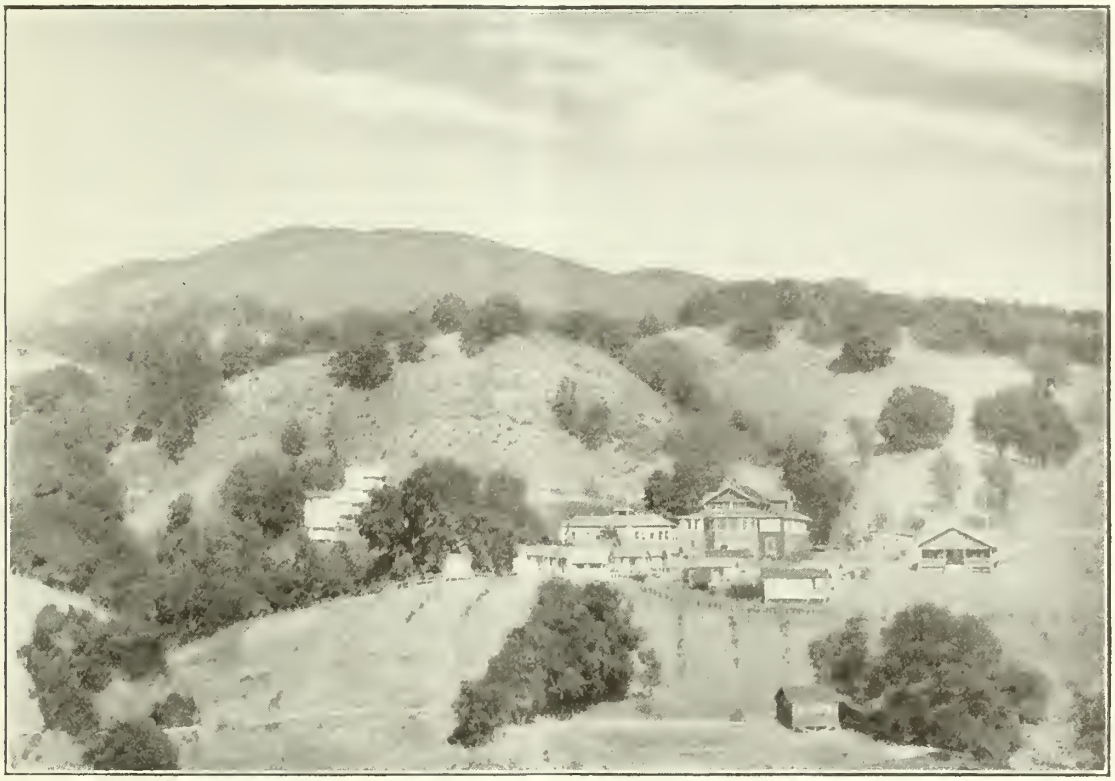

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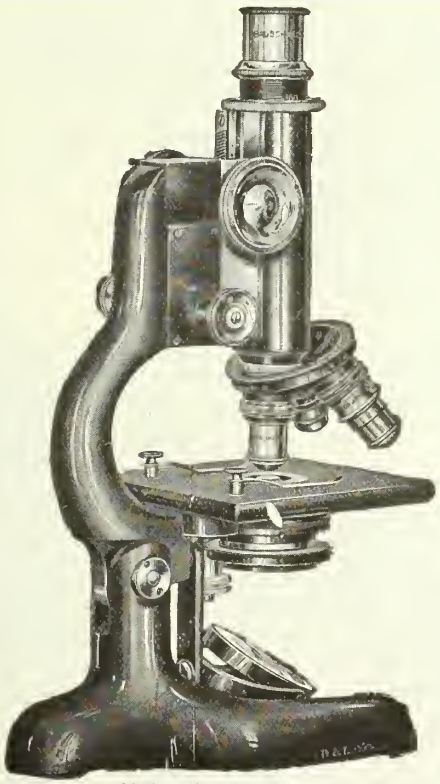

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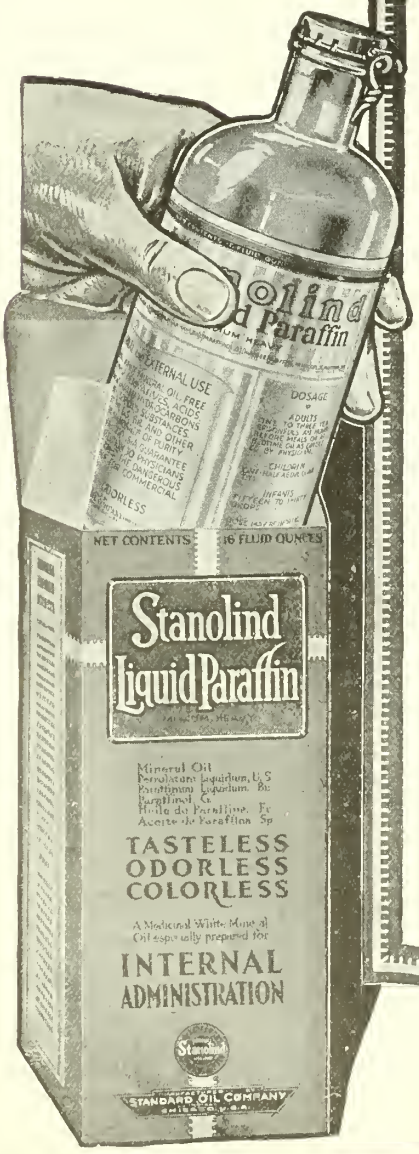

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72 W. Adams St.
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74

The Storm Binder and Abdominal Supporter

(PATENTED)

Manufactured in San Francisco, Cal.

LIGHT
FLEXIBLE
DURABLE
WASHABLE

Special support in cases of Prolapsed Kidney, Stomach, Colon and Hernia.

A general support in Pregnancy, Obesity and General Relaxation.

The best Post-Operative Supporter Made.

SEND FOR ILLUS TRATED FOLDER

a At the Waist line.
b At the middle abdomen, largest girth.
c At the lower abdomen.
d One thigh.
e Top to bottom in front.
State whether for man or woman.

Diagram for Measuring

ORTHOPEDIC APPLIANCES, TRUSSES and ELASTIC HOSIERY

FRANK F. WEDEKIND, 2004-06 Sutter Street, San Francisco

Phone West 6322

A good name

—be it "professional" or "trade"—**never** "just happens."

The sterling reputations of America's medical men, from the leaders to the rank-and-file, **were built,** step by step, by hard study and harder work.

That's the way **our** name came to stand for "Quality"; and we've been more than a half-century "building" it.

SHARP & DOHME

SINCE 1860

"Quality Products"

Are **you** using them? The best druggists sell them

ALQUA

The Improved Alkaline Water

In Pre- and Post-Operative Conditions

DOCTOR, UPON REQUEST WE WILL FURNISH YOU WITH SAMPLES

Alqua Medicinal Water Co.

20-40 Beideman Street San Francisco

Phone West 373

Los Angeles Agency:

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A Tonic with Food Value

You will find in Malt-Nutrine valuable tonic properties due to the aromatic bitter principles of Saazer hops. You will also find the *food* value of more than 14 per cent. of pure malt extract. The ingredients of Malt-Nutrine are carefully and properly chosen to constitute a real food tonic and are combined through scientific processes under the direction of competent chemists.

ANHEUSER-BUSCH'S
Malt-Nutrine
TRADE MARK.

is the recognized standard of medicinal malt preparations. It is extensively prescribed by physicians as a food-tonic for nursing mothers, protracted convalescence from acute diseases, insomnia and many other conditions. Do *not* confuse it with cheap dark beers.

Pronounced by the U. S. Internal Revenue Department a

PURE MALT PRODUCT

and not an alcoholic beverage.

Anheuser-Busch, -:- St. Louis

The New German Hospital

14th and Noe Streets

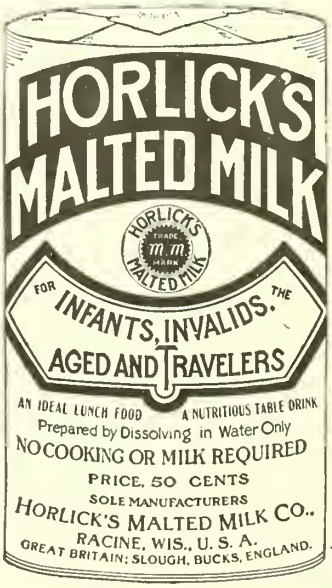
Beautifully located in a scenic park
Rooms large and sunny—Rates reasonable—Fine cuisine
Unsurpassed Operating, X-ray and
Maternity Departments

Training School for Nurses

For further information
Address, GERMAN HOSPITAL

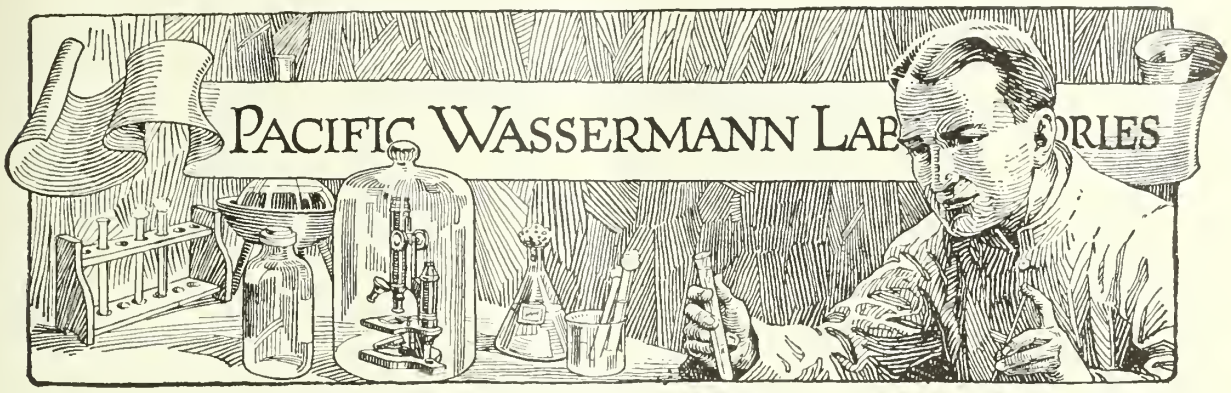
Horlick's the Original Malted Milk

This is the package. Others are substitutes.



Palatable, agreeable and beneficial to infant, invalid and convalescent.

Horlick's Malted Milk Company, Racine, Wisconsin



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BLOOD TESTS

WASSERMANN TEST (INCLUDING NOGUCHI CONTROL TEST)..... $ 5.00
Complement fixation test for Gonorrhea, Cancer or Tuberculosis..... 5.00
THE NEWER CHEMICAL BLOOD TESTS. Of diagnostic value in Nephritis, Diabetes, Arthritis, Rheumatism and Acidosis. Full information and fee list regarding these tests furnished on request.
Red, white and differential count, haemoglobin, parasites and morphology of cells..... 5.00
Malaria..... 2.00
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Red and haemoglobin..... 2.50
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Widal reaction (macroscopic and microscopic)..... 2.00
Culture for typhoid, streptococci, staphylococci, pneumococci or other bacteria..... 5.00
Hemolytic and agglutination tests for blood transfusion 5.00
Medico-legal tests, reaction, specific gravity, coagulation time, etc.—Fee upon application.

CEREBRO-SPINAL FLUID

Gold Test, Lange's..... $ 5.00
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Noguchi butyric acid test or Nonne test..... 2.00
Tubercle bacillus, through smear examination..... 2.00
Bacteria, through smear..... 1.00
Bacteria, through culture..... 2.00
Leukocyte count, albumen or sugar, each..... 1.00
Complete examination, including physical, albumen, sugar, Noguchi butyric acid test, Nonne test, Wassermann and Noguchi tests, cytology and bacteria by smear..... 10.00

SPUTUM

Microscopic examination for T. B., etc..... $ 1.00
T. B., through guinea-pig inoculation..... 5.00
Bacteria, through culture..... 2.00
Autogenous vaccine, 30 c. c. flask..... 5.00

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Macroscopic and microscopic examination for amoeba, protozoa, ova, etc..... $ 2.00
Occult blood..... 1.00
Chemical, including solids, fats, nitrogen and carbohydrates, etc..... 5.00
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Tubercle bacillus, through smear examination..... 2.00

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General: Chemical and microscopical, including specific gravity, reaction, qualitative sugar and albumen, indican and total solids..... $ 1.50
Quantitative estimation of sugar, albumen or urea, each 1.00
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Bacteria, through culture..... 2.00
T. B., through smear..... 2.00
T. B., through guinea-pig inoculation..... 5.00
Autogenous vaccine, 30 c. c. flask..... 5.00
Acetone or diacetic acid, each..... 1.00
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Total nitrogen..... 5.00
'Phthalein functional test (send patient to laboratory).. 5.00

GASTRIC CONTENTS

Complete macroscopic, chemical and microscopical examination..... $ 5.00
Occult blood only..... 1.00
Boas-Oppler bacillus only..... 1.00
Qualitative inorganic and organic acids only..... 2.50
Lactic acid only..... 1.00

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Gonococcus, through Gram stain..... $ 1.00
Microscopical examination for bacteria, etc..... 1.00
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Spirocheata pallida..... 3.00
Cytology..... 2.00
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SECRETIONS OF THE GENITAL ORGANS

Microscopic examination for bacteria..... $ 1.00
Cultures..... 2.00
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ORAL, NASAL, AURAL AND CONJUNCTIVAL SECRETIONS

Microscopic examination for bacteria, pathologic changes, etc..... $ 1.00
Culture for diphtheria or other bacteria..... 2.00
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TUMORS OR UTERINE SCRAPINGS

(Give history and source of specimen)..... $ 5.00

SPECIMENS will be called for at your office, patient's residence or hospital, without extra charge, in cities where our laboratories are established.
STERILE CONTAINERS, culture media, slides, etc., furnished without charge on request.
REPORTS TELEGRAPHED to out-of-town physicians without extra charge, when requested.

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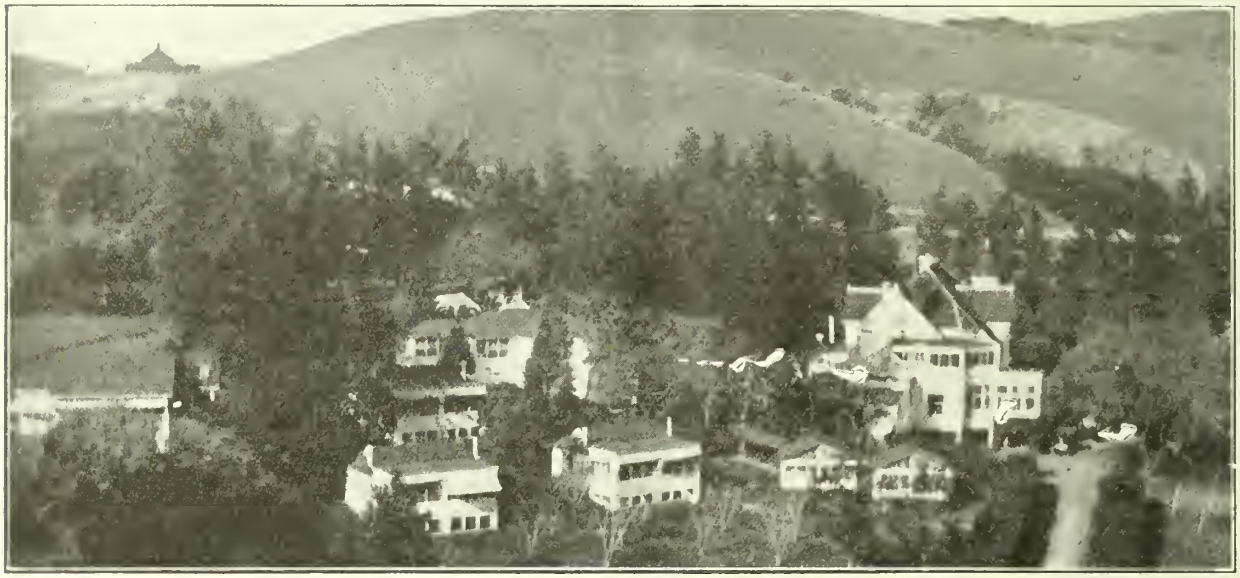
FOR THE

Scientific Treatment *of* Tuberculosis

BELMONT, SAN MATEO CO., CALIFORNIA



General View

Climatic conditions ideal. Well protected from wind and fog, so that patients can stay out doors day and night. Not too hot in summer, not too cold in winter.

Beautiful surroundings. Garden, Orchards and Wooded Hillsides. 42 acres of land, with excellent spring water.

Within easy reach from San Francisco; 40 minutes by train.

All rooms in the main building are connected with sleeping porches.

New cottages, solidly built and elegantly furnished, with all modern conveniences, as Electricity, Gas, Telephones, separate bath-rooms and toilets, etc.

Prices from $25 per week upwards, which includes medicines and medical attendance.

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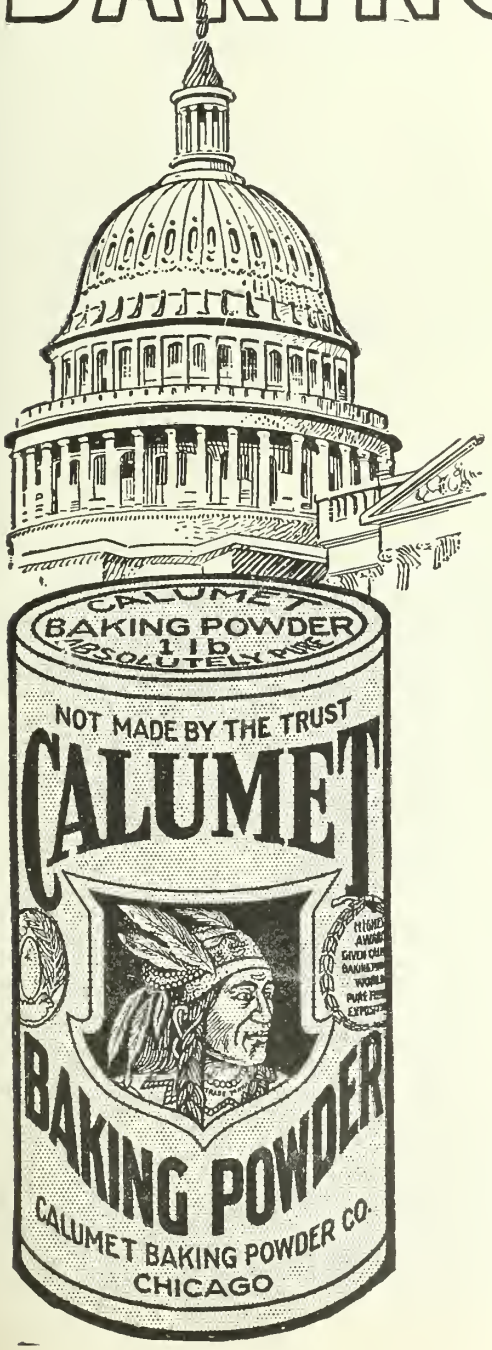
Telephone Garfield 1940

Or DR. HARRY WARREN,
Assistant Med. Director,
Belmont.

CALUMET
BAKING POWDER



Complies with pure food laws, State and National.

The wholesomeness of such ingredients as are used in Calumet is attested by The Remsen Referee Board.

It is recommended by Physicians and Chemists.

It is manufactured in the largest, finest and most sanitary Baking Powder Plant in the world.

It is used by domestic science teachers and experts.

It is the favorite Baking Powder in millions of American homes.

Calumet Baking Powder is guaranteed to give satisfaction in every particular, and to be as represented in every respect.

CALUMET BAKING POWDER CO.
CHICAGO, ILL.

FOOD, BEVERAGES AND MILK PRODUCTS IN THE DIETARY

The supply of sanitary food and milk products is a problem which is given scant attention in the usual medical training, and is a subject on which the general practitioner is usually not well informed.

He should be. "How to keep well," and the right use of foods for this purpose; the foods necessary to rebuild depleted conditions; those required for postoperative treatment, for nursing mothers, and for babies, are vital questions for every practicing physician.

Physicians should also be informed as to methods and foods which will help to solve the problem of

"The High Cost of Living"

For example, it is known that oleomargarine is cheaper than butter; but is it generally known that oleomargarine and butter are essentially of equal digestibility? That some of the best oleomargarine contains 89% of fat and 9% of water, while butter has less fat—85%; and more water—11%? Oleomargarine is made in large quantities, under sanitary conditions and government inspection, from selected oleo oils and butter fats. It is colored with butter color, or, if sold uncolored, is 10 cents less per pound. Oleomargarine remains firm at a higher temperature than butter, which is an item in its favor in warm climates and where ice is expensive. All these considerations should induce physicians to study the merits of oleomargarine as a food product.

Physicians should also be familiar with

The Relative Food Values

Of wheat, corn, oats, barley and other breakfast foods; with rice, macaroni, and even bread. It is known that protein is the essential constituent of all meats, eggs, fish and milk; that protein is found in vegetable foods. It is known also that the carbohydrates, sugars and starches, are found in the great staple products, such as potatoes, beans, corn, etc. But what are the proportions? Which foods are best adapted to particular conditions? Does the baby need protein or carbohydrates? What is known about the merits and uses of baking powders, gelatine, grape juice, malted foods, malted milks, condensed milks and the dozens of other well known products that are advertised for the dietary?

It is with a view of bringing the subject of

Food and Milk Products

To the attention of readers that this article is published. Particular attention is called to such products as are advertised in this issue. Many of these announcements give specific information as to the nature of the products; tell how they are manufactured; give the protein and carbohydrate content; suggest conditions in which they are indicated, etc. They contain much valuable information for physicians.

In this issue the following will be found:

BORDEN'S CONDENSED MILK CO., Page xxxv, New York City, N. Y.
CALUMET BAKING POWDER CO., Page xvii, Chicago, Ill.
HORLICK'S MALTED MILK CO., Page xiv, Racine, Wis.
JOHNSON EDUCATOR FOOD CO., Page xlvi, Boston, Mass.
MEAD, JOHNSON & CO., Page xxxvi, Evansville, Ind.
MELLIN'S FOOD CO., Page xxi, Boston, Mass.
QUAKER OATS CO., Pages xxxi and xxxvii, Chicago, Ill.
WAUKESHA PURE FOOD CO., Page xxvii, Waukesha, Wis.
WIDEMANN GOAT MILK CO., Page xxx, San Francisco, Cal.

Colfax School for the Tuberculous

Experience has shown that Sanatorium treatment is the most efficient and most approved method of treating the tuberculous. Those patients who are able to take advantage of the superior facilities offered by sanatorium treatment should not be denied the opportunity of receiving these benefits.

The cottage colony of the Colfax School for the Tuberculous provides accommodations for patients who have not only all the advantages of the sanatorium regime and supervision but at the same time have the benefit of home cooking and surroundings. While the patient improves the other members of the family daily receive instructions relative to those things everyone should know regarding tuberculosis.

Information regarding the methods of treatment and other details of interest to the physician and his patient are given in a booklet which will be sent on request.

Address all communications to

DR. ROBERT A. PEERS, Medical Director

Colfax, California

Typhoid-Paratyphoid Prophylaxis

Vaccination against Typhoid will not protect against Paratyphoid infection.

The incidence of Paratyphoid infection is more considerable than is generally thought.

It has been well established that a mixed vaccine containing Bac. Typhosus (killed) and Bac. Paratyphosus "A" and "B" (killed) produces a high degree of immunity against each organism.

Therefore, combined immunization treatment is preferable to the single immunization against Bac. Typhosus only.

CUTTER'S
Typhoid-Paratyphoid Prophylactic

In ready-to-use syringe is the ideal method of immunization.

One (graduated) syringe (containing enough for three injections, one full immunizing treatment) with three sterile needles.$ .75

Bulk Packages

Packages of three bottles (one full immunizing treatment) ... .75

Hospital package, thirty bottles (containing ten full immunizing treatments) 3.50

Twenty c. c. bottle (containing enough for eight full immunizing treatments) 3.00

We also furnish Typhoid Prophylactic (for immunizing against Bac. Typhosus only) in the ready-to-use syringe and bulk packages at same prices.

When ordering from your druggist, specify whether Typhoid, or Typhoid-Paratyphoid, and style of package wanted, and please specify "Cutter's."

Write for new booklet, "The Prophylactic and Therapeutic use of Typhoid Vaccine."

THE CUTTER LABORARORY
(Biologics only for nearly 20 years)

BERKELEY CALIFORNIA

Constipation of Infants

may often be readily traced to imperfect digestion of protein or fat, to a deficiency of total solids in the diet, to a lack of energy, or to a diet containing starchy substances. While this condition is not necessarily a serious one, a natural elimination with soft, smooth stools of a good character is much to be desired, and has no little bearing on the general health of the infant.

The prompt and favorable results following the use of Mellin's Food in constipation is common knowledge to a vast number of medical men, but to physicians who are not familiar with the application of Mellin's Food to correct these errors of diet, we will send, if desired, suggestions which will be found very helpful.

Mellin's Food Company, **Boston, Mass.**

Parathyroids—
Powder and Tablets, 1-20 grain.

Red Bone Marrow—
(Medullary Glyceride) Hematogenetic, Histogenetic.

Corpus Luteum—
(True Substance)
Powder, Tablets and 2 and 5 grain Capsules.

Armour's
LABORATORY
PRODUCTS

Elixir of Enzymes—
Digestant and palatable vehicle.

Pineal Substance—
Powder and Tablets, 1-20 grain

Pituitary, Anterior—
Powder and Tablets, 2 grain.

Pituitary, Posterior—
Powder and Tablets, 1-10 grain.

Pituitary Liquid
(*Armour*)

A pure, potent preparation of the Posterior Pituitary Body. Uniform and reliable alike, in surgical and obstetrical work.

PITUITARY LIQUID (*Armour*) is entirely free from local anesthetics and other objectionable preservatives.*

PITUITARY LIQUID (*Armour*) standard strength, is supplied in two sized ampoules, 1cc and ½cc, 6 in a box.

* Vide Hygienic Laboratory Bulletin No. 109.

ARMOUR AND COMPANY
CHICAGO

1489

DO YOU KNOW ABOUT PARRESINE?

The Hot-Wax Dressing for Burns

Since the introduction of **Parresine** (Abbott) many splendid reports have been received from prominent surgeons and physicians who have used this product successfully.

Under the **Parresine-Chlorazene** treatment the intense pain of a severe burn is promptly relieved and beneath the wax-like layer of **Parresine**, which is painted with a camel's hair brush or sprayed hot from an atomizer on the wounded surface, new skin grows with unusual rapidity. The danger of scarring and contracture is greatly lessened.

Chlorazene, Dakin's new antiseptic, should be used daily, in all cases, to render the wounded surface aseptic. **Chlorazene** is a powerful antiseptic, yet virtually non-toxic and non-caustic.

PACKAGES AND PRICES

Parresine is offered to the medical profession at $1.25 per pound postpaid. Usual discounts for quantity-orders and to the trade. One full-size half-pound cake, with directions, will be sent to any inquiring physician or pharmacist, on receipt of 75 cents. **Chlorazene**—Price, 60 cents per 100 tablets; 55 cents for Hospital Package No. 1—making 4 gallons of a 0.25 per cent. solution.

Correspondence with hospitals and large industrial users is requested. Full directions for use accompany every package of Parresine. Literature on request.

Both **Parresine** and **Chlorazene** have been passed by the Council of Pharmacy and Chemistry of the American Medical Association, and supplies of both have been ordered by the United States Navy to be placed on every ship.

THE ABBOTT LABORATORIES

CHICAGO - NEW YORK

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Answer these Questions!

Have you *adequate protection* for yourself and family by an accident policy?

Considering the *low cost of protection, can you afford* to carry your own risk?

Physicians' Casualty Assn.

of OMAHA, NEBRASKA

OFFICERS:—D. C. BRYANT, M.D., Pres., D. A. FOOTE, M.D., Vice-Pres., E. E. ELLIOTT, Sec'y-Treas.

furnishes accident insurance at actual cost. *Statistics prove that we have paid more for claims, and less for expense, per capita, than any other accident company.*

More than $4.00 paid for claims to each dollar used for expense. Most other concerns pay $1.00 for claims to each dollar of expense.

Fourteen years' successful operation. Conducted by physicians for physicians. Considerate treatment of claimants a feature.

The Physicians' Health Association pays indemnities for disability due to illness instead of accidents. An important protective insurance for physicians. Send for circular.

Send for Literature or Sample Policies

E. E. ELLIOTT, Sec., 304 City Nat'l Bank Bldg., Omaha, Neb.

(3)

PATRONIZE

YOUR

JOURNAL

ADVERTISERS

Removal Notice

The Bering Sanitarium for the treatment of drug addictions has moved from Page and Laguna Streets to the corner of Masonic Avenue and Page Street, and will in future be known as

The Park Sanitarium

The Sanitarium is equipped with all modern appliances for the treatment of alcoholic and drug addictions, and mental and nervous diseases.

This hospital is open to any reputable physician.

When the patient is under the care of his own physician the following rates apply:

Rooms without bath	**$ 20.00-$40.00**	**per week**
Rooms with bath	**$ 35.00-$50.00**	**per week**
Suites	**$100.00**	**per week**

These rates include medicine and general nursing.

The advice of the hospital staff is always at the disposal of the patients' physicians.

Service and cuisine of the highest order.

R. E. BERING, M. D.

TELEPHONE MARKET 8048

Back East Excursions

SALE DATES:

June 1, 2, 11, 12, 16, 17, 26, 27, 30.
July 1, 2, 16, 17, 24, 25, 31.
August 1, 14, 15, 28, 29.
September 4, 5.

Some Fares:

(Direct Routes)

Denver, Pueblo	$ 62.50
Omaha, Kansas City	67.50
Dallas, Houston, San Antonio	70.00
New Orleans, Memphis, St. Louis	77.50
Chicago	80.00
Minneapolis, St. Paul	84.45
Washington, D. C., Baltimore	116.00
New York, Philadelphia	118.20
Boston	120.20

Proportionately low far to many other points. Going Limit—15 days; Return Limit—3 mos. from date of sale (but not later than Oct. 31.) STOPOVERS: Going—east of Calif. State line; Returning—at all points. See agents

Southern Pacific

Write for folder on the Apache Trail of Arizona

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2. X-Ray equipment (interrupterless)
3. Laboratories
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7. High Frequency
8. Complete Electrical Equipment
9. Mechanical Swedish
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11. Recreation grounds

ACCESSORIES

Dairy—125 Tuberculin Tested Cows
Farm — Laundry
Gardens — Orchards
Bakery — Garage

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MEDICAL AND SURGICAL

Equipped with all modern appliances for the rational treatment of disease. Situated in the famous Citrus belt of Southern California, sixty-two miles from Los Angeles on the main line of the Southern Pacific Railway

ADDRESS

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Loma Linda Sanitarium — Loma Linda, California

ROOMS AND SUITES

LOCATED

In Main Building, 75 rooms
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In Cottages, 25 rooms
Rooms with or without bath or screen porch

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Julia A. White, M. D., Diseases of Women
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The method is simple and you need not be an X-Ray expert to get the finest results—**every time.**

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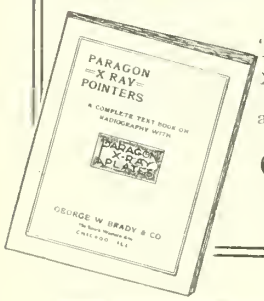
Free Book Shows the Way



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(Can accommodate but four persons at a time)

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We are four short blocks from the ocean; one-half block from Golden Gate Park. We give care of practical nurse, sunny rooms, trays in room if desired, special diet.

RATES—$15.00 PER WEEK AND UP

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Fine Location for Physician

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S. E. Corner Grove Street and Ashby Avenue
— or —
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In Its Most Inviting Form

Test Lots Free

Gelatine is gaining new recognition as a food for ailing people.

It is the most efficient protein-sparer known. It will save half its weight of protein from destruction. It is easily digested. It does not burden the kidneys.

Our Latest Flavor

Waukesha gelatine, used in Jiffy-Jell, is the highest grade produced. It is worth on the market twice as much as the common. And we control the output.

In Jiffy-Jell it is instantly prepared. Simply add boiling water. Then add the fruit-juice flavor from the vial that is inclosed in each package.

All the fruit flavors in Jiffy-Jell are made from the fruit itself. All come sealed in vials. Thus Jiffy-Jell desserts are made doubly delightful. Let us send you enough to try.

True Fruit Flavors

Flavors in Vials

These fruit-juice flavors, sealed in vials, give the tang and zest of the fresh ripe fruit. And the flavor isn't spoiled in the making. It isn't scalded. The flavor is added when the jell has partly cooled.

Jiffy-Jell desserts need no fresh fruit to be appetizing, though fresh fruit can be added. Other things may be added, like puffed wheat or rice, nuts, chocolate or whipped cream. There are a hundred forms of Jiffy-Jell desserts.

Flavors Not Scalded

Ask us for a test assortment. A Recipe Book will come with it. Learn how delightful are these quick, fruity desserts when flavored in this way.

Jiffy-Jell is made in America's model food plant. It is made by Otis E. Glidden, the famous gelatine expert. It will give you a new conception of gelatine desserts.

Test Lots Free
To Physicians and Hospitals on Request.
Hospital Sizes
Twice the Ordinary.

Jiffy-Jell

Reg. U. S. Pat. Office

The Supreme Dessert
Fruit-Juice Flavors in Vials
WAUKESHA PURE FOOD CO.
Waukesha, Wis.

Eight Flavors

Strawberry	Orange
Raspberry	Lemon
Cherry	Lime
Pineapple	Mint

SIOMINE
"S-IO D-AMINE"

(Hexamethylenamine tetraiodid; Iodin content, 78.5 per cent.)

USES: Where iodids are indicated, especially in tertiary syphilis—bone lesions, ulcers, gummata of brain and other organs, locomotor ataxia, neuritis, skin lesions. Also in arteriosclerosis especially with high blood tension; asthma; acne; chronic rheumatism.

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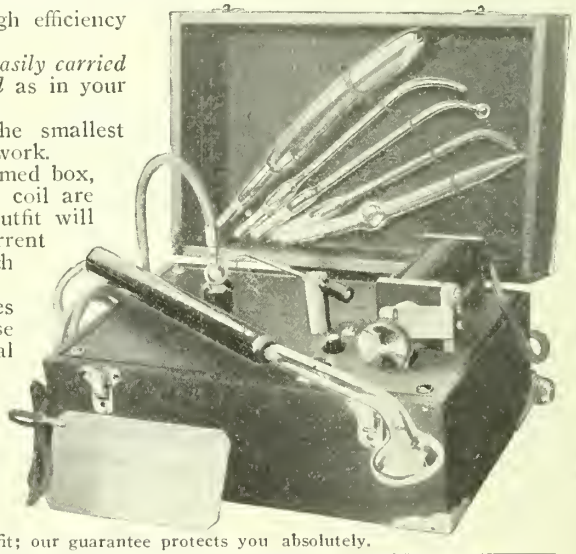

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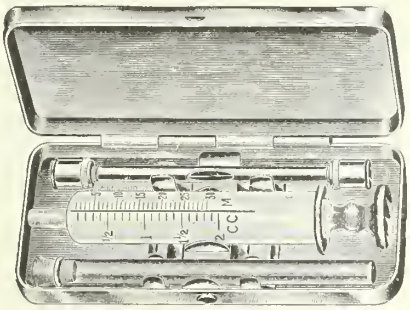

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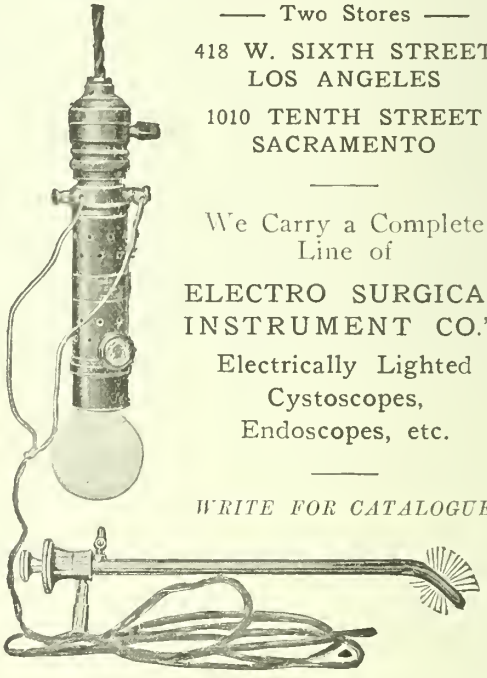

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Counties.	President.	Secretary.	Meets.
Alameda County Medical Association	R. T. Stratton, Oakland	Elmer E. Brinckerhoff, 1st Nat'l Bank Bldg.	3rd Tuesday, Oakland Hotel, Oakland.
Butte County Medical Society	J. O. Chiapella, Chico	E. E. Baumeister, Chico	2nd Tuesday.
Contra Costa County Medical Society	P. C. Campbell, Richmond	U. S. Abbott, Richmond	2d Sunday every month.
Fresno County Medical Society	J. L. Maupin, Fresno	Kenneth J. Staniford, Fresno	1st Tuesday.
Glenn County Medical Society	Saml. Iglick, Orland	Frank M. Lawson, Willows	
Humboldt County Medical Society	F. R. Horel, Arcata	L. A. Wing, Eureka	2d Tuesday.
Imperial County Medical Society	L. R. Moore, Imperial	L. C. House, El Centro	
Kern County Medical Society	A. I. Fraser, Bakersfield	C. A. Morris, Bakersfield	3d Monday.
Lassen-Plumas County Medical Society		R. W. T. Garner, Susanville	
Los Angeles County Medical Society	C. C. Browning, Los Angeles	Geo. H. Kress, Los Angeles	1st & 3d Thursday except July, Aug., Sept.
Marin County Medical Society	Waid J. Stone, San Rafael	Harry O. Hund, San Rafael	2d Thursday each month
Mendocino County Medical Society	F. C. Peirsol, Mendocino	O. H. Beckman, Fort Bragg	Meets quarterly.
Merced County Medical Society	D. W. Zirker, Merced	Jay Leroy Mudd, Merced	1st Thursday.
Monterey County Medical Society	H. C. Murphy, Salinas	T. C. Edwards, Salinas	1st Saturday.
Napa County Medical Society	Dr. E. Osborne, Napa	Otto T. Schulze, Napa	1st Tuesday.
Orange County Medical Association	R. A. Cushman, Santa Ana	W. C. Dubois, Santa Ana	1st Tuesday.
Placer County Medical Society	H. T. Rooney, Colfax	R. E. Allen, Newcastle	1st Saturday every 2d month.
Riverside County Medical Society	W. S. Davis, Corona	A. E. Strong, Riverside	2d Monday.
Sacramento Society for Medical Improvement	C. B. Jones, Sacramento	W. A. Beattie, Sacramento	3d Tuesday.
San Benito County Medical Society	L. C. Hull, Hollister	F. O. Nash, Hollister	1st Monday.
San Bernardino Medical Association	P. M. Savage, San Bernardino	Carroll C. Davis, San Bernardino	1st Tuesday.
San Diego County Medical Society	H. C. Oatman, San Diego	G. T. Courtenay, San Diego	1st and 3d Tuesdays.
San Francisco County Medical Society	A. H. Giannini, San Francisco	René Bine, San Francisco	Every Tuesday.
San Joaquin County Medical Society	C. R. Harry, Stockton	Dewey R. Powell, Stockton	4th Friday, except July and August.
San Luis Obispo County Medical Society	R. O. Dresser, Paso Robles	A. H. Wilmar, Paso Robles	1st Saturday of each month.
San Mateo County Medical Society	F. S. Gregory, Redwood City	J. L. Ross, Redwood City	1st Friday each month.
Santa Barbara County Medical Ass'n.	C. S. Stoddard, Santa Barbara	R. M. Clarke, Santa Barbara	2d Monday.
Santa Clara County Medical Society	Chas. B. Hare, San Jose	Ed. Newell, San Jose	3d Wednesday.
Santa Cruz County Medical Society	H. E. Piper, Santa Cruz	A. N. Nittler, Davenport	1st Monday.
Shasta County Medical Society	F. Stabel, Dunsmuir	Ernest Dozier, Redding	Meets quarterly.
Siskiyou County Medical Society	C. W. Nutting, Etna Mills	J. R. Jones, Yreka	Meets 1st Monday each quarter.
Solano County Medical Society	J. W. Brownlie, Vallejo	Paul Reilly, Vallejo	3d Wednesday.
Sonoma County Medical Society	M. B. McAulay, Petaluma	Elizabeth M. Yates, Santa Rosa	1st Friday.
Stanislaus County	F. R. De Lappe, Modesto	E. F. Reamer, Modesto	
Tehama County Medical Society	F. J. Bailey, Red Bluff	F. H. Bly, Red Bluff	
Tulare County Medical Society	R. N. Fuller, Tulare	A. W. Preston, Visalia	1st Tuesday
Tuolumne County Medical Society	C. E. Congdon, Jamestown	G. C. Wrigley, Sonora	
Ventura County Medical Society	W. J. Lewis, Ventura	C. A. Jenson, Ventura	1st Monday.
Yolo County Society for Medical Improvement	H. D. Lawhead, Woodland	L. J. Beebe, Woodland	1st Tuesday, except July, Aug. and Sept.
Yuba-Sutter Counties Medical Society	Allen Gray, Marysville	A. L. Miller, Marysville	Meets every 2 months.

N. B.—Secretaries will please notify Journal office of any changes taking place in their respective counties.

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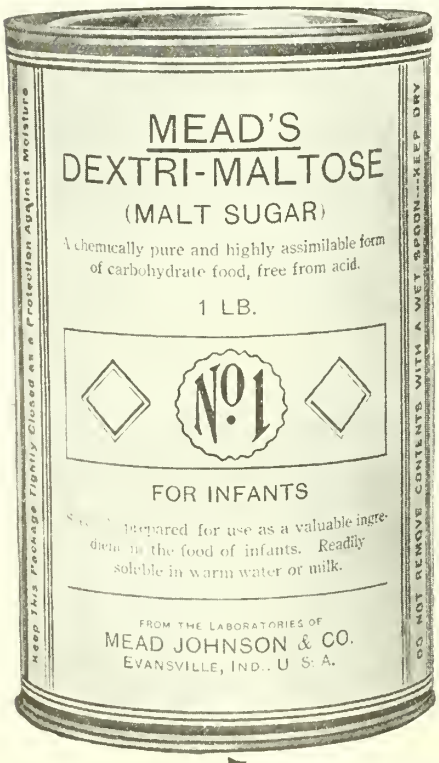
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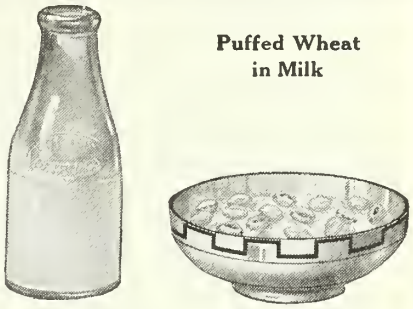

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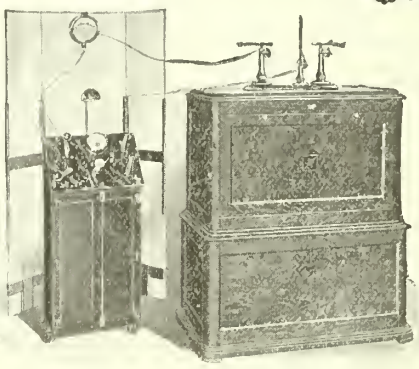

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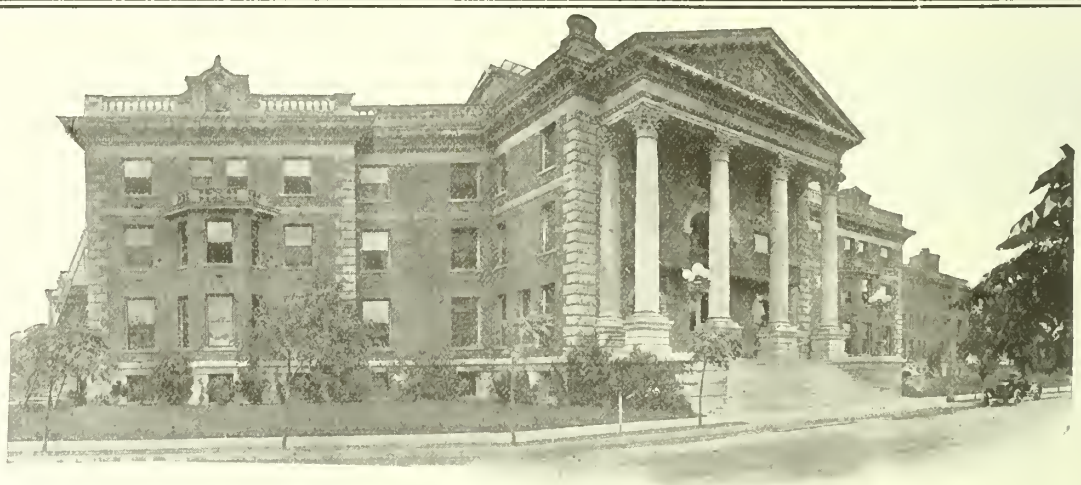

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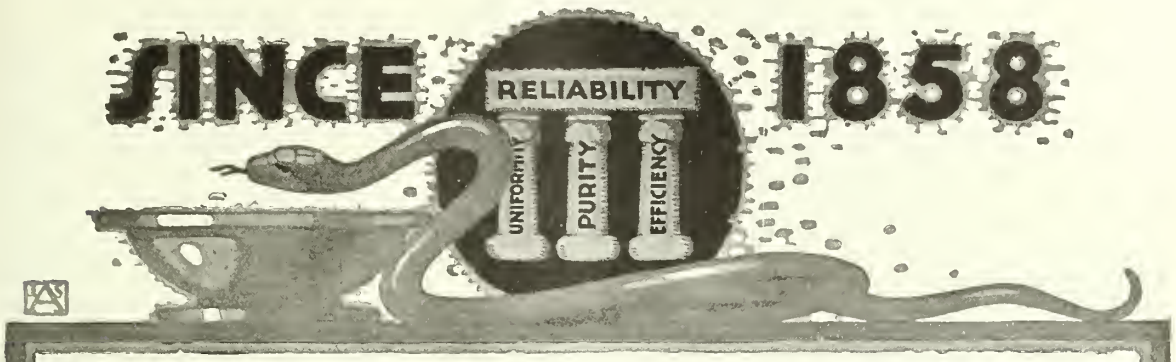

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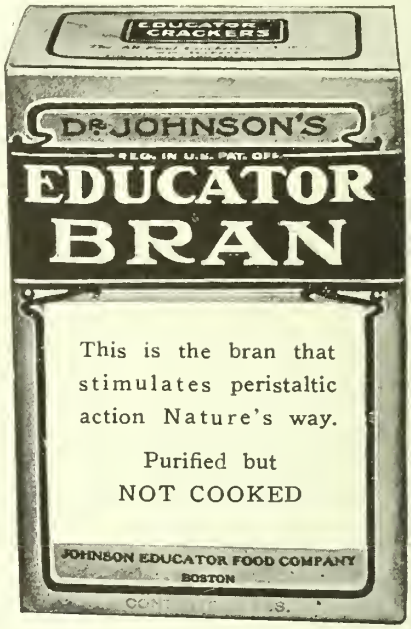

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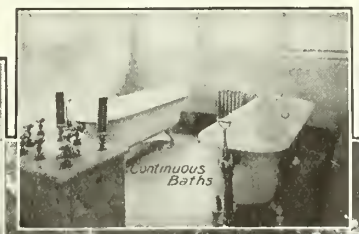

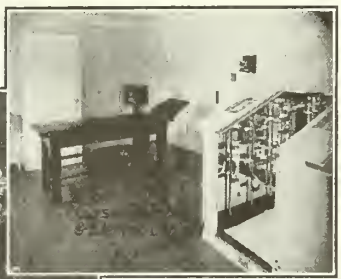

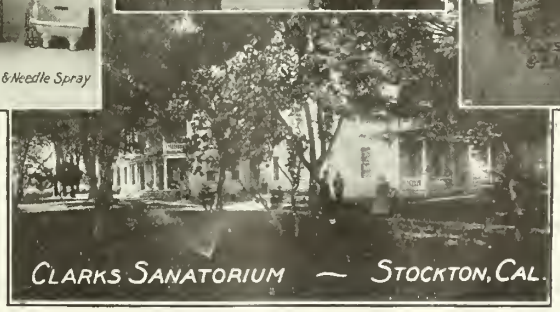

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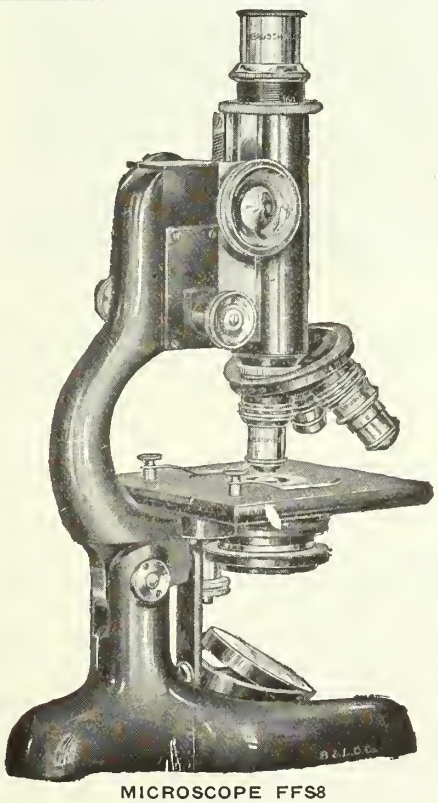

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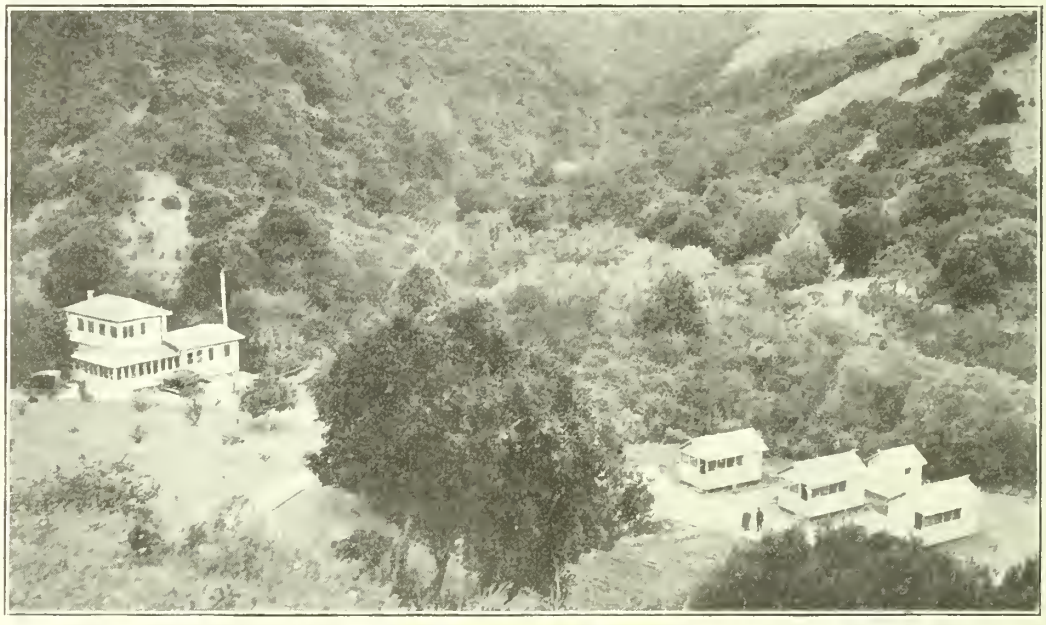

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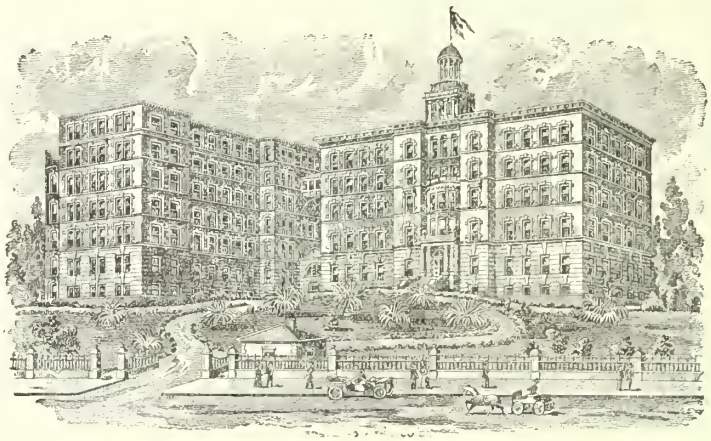

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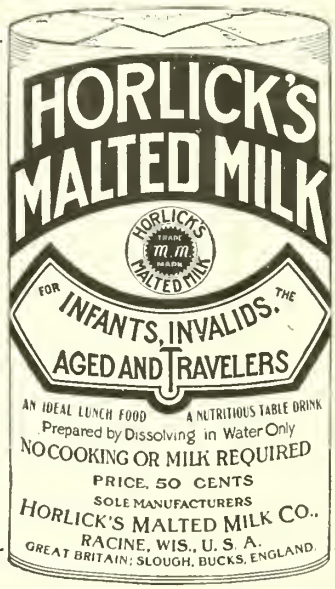

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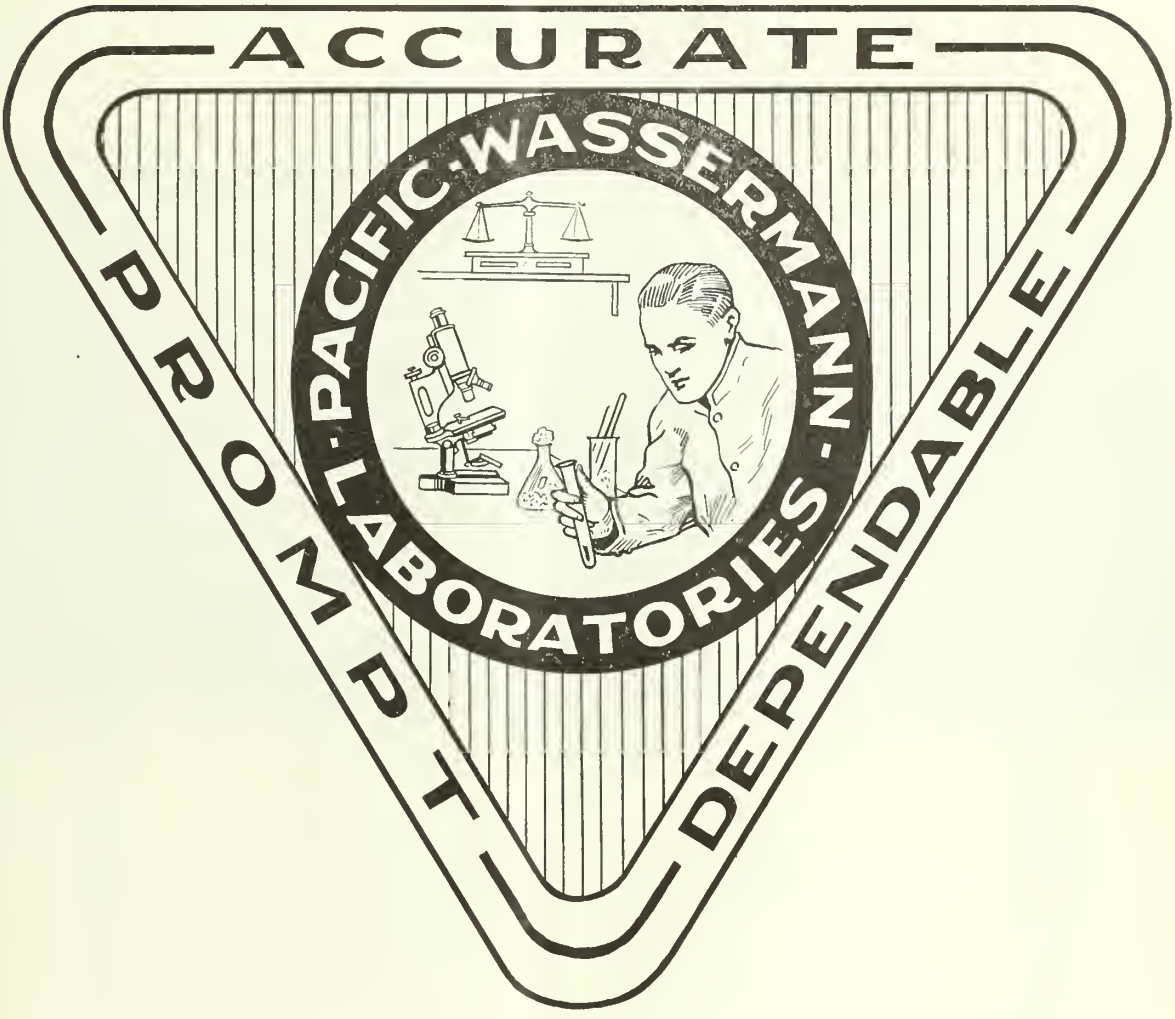

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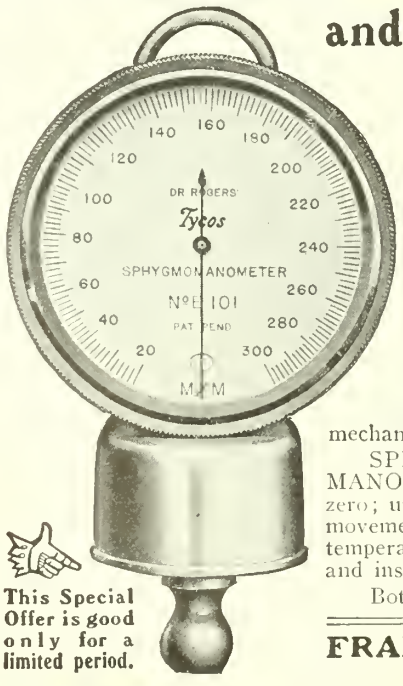

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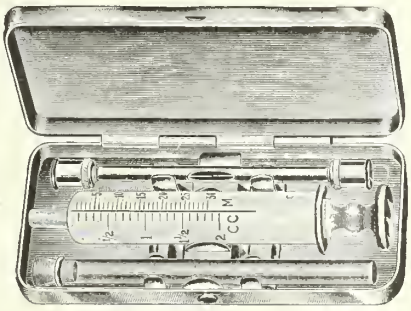

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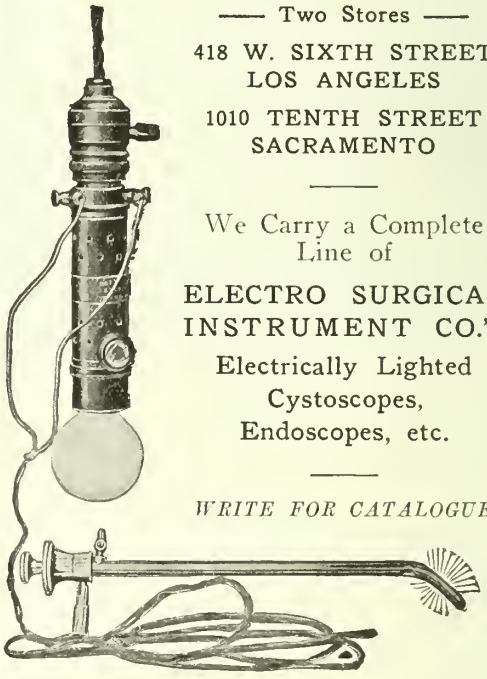

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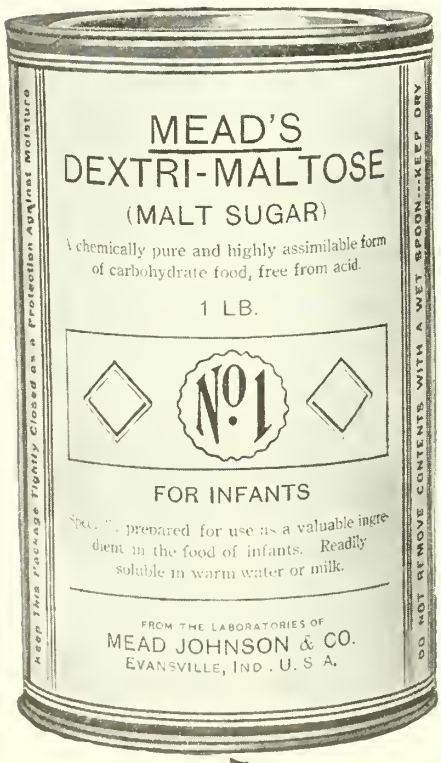
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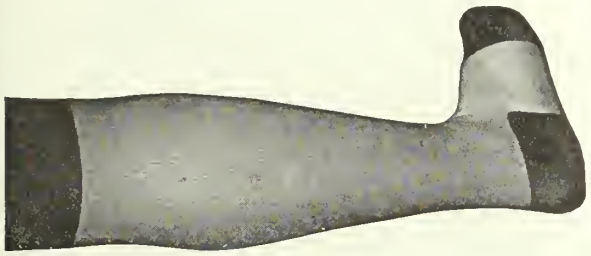

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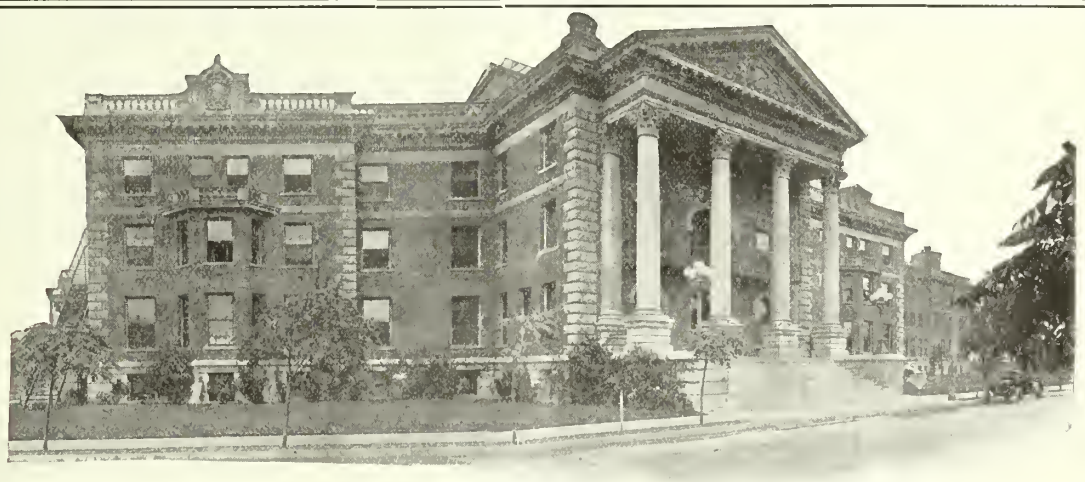

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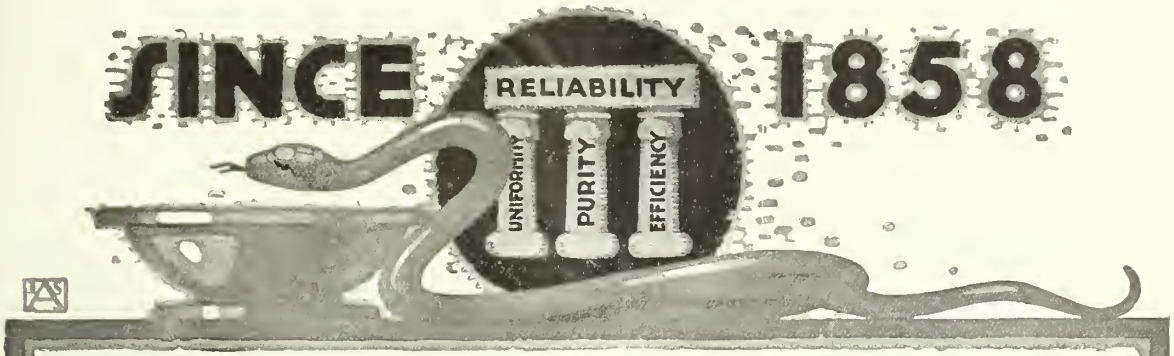

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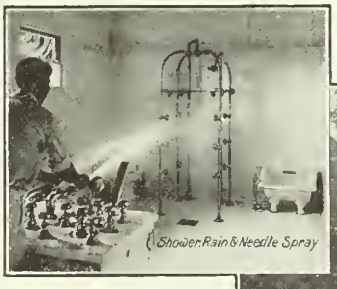

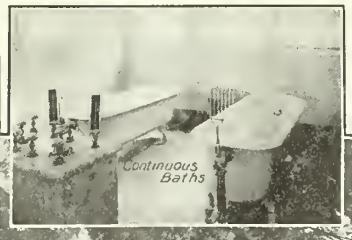

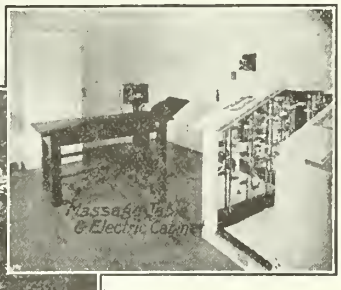

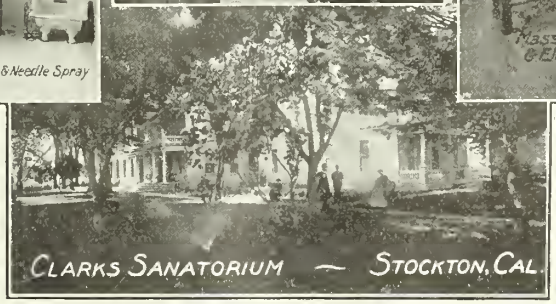

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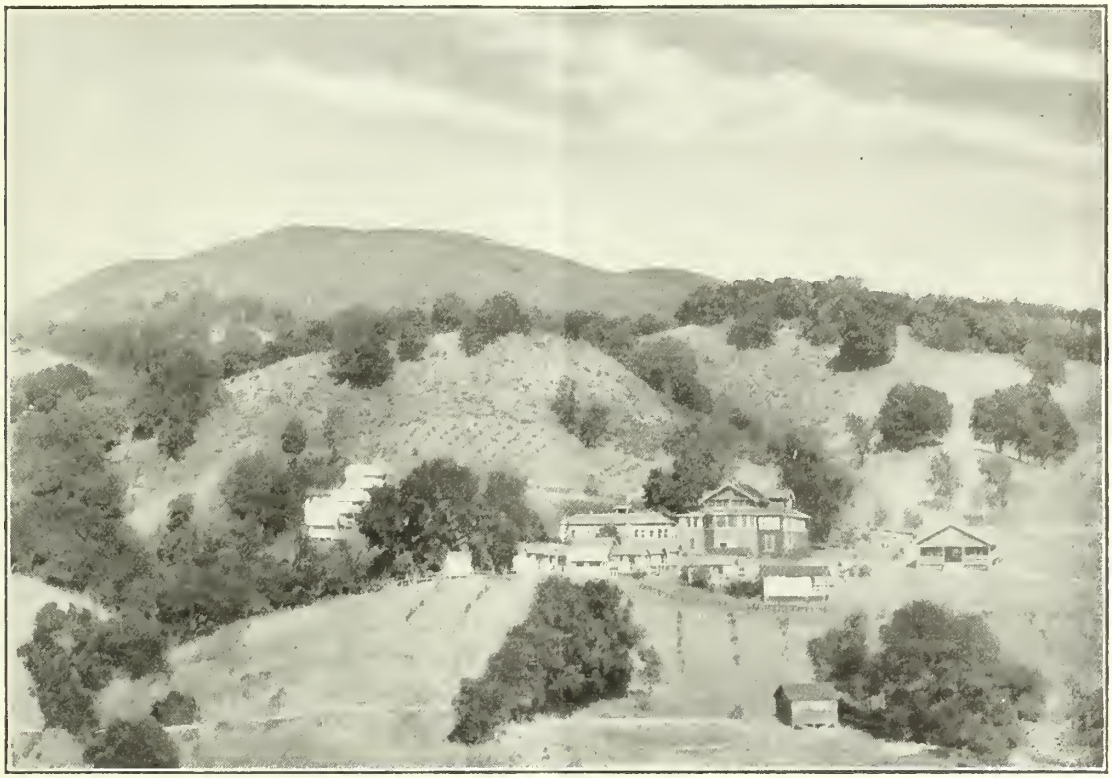

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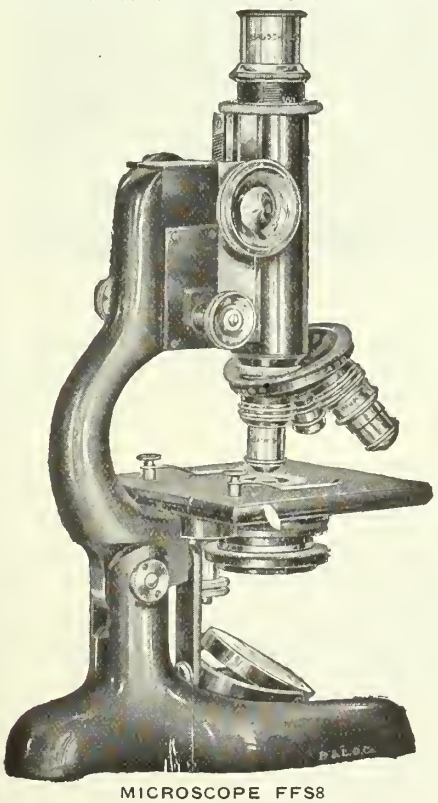

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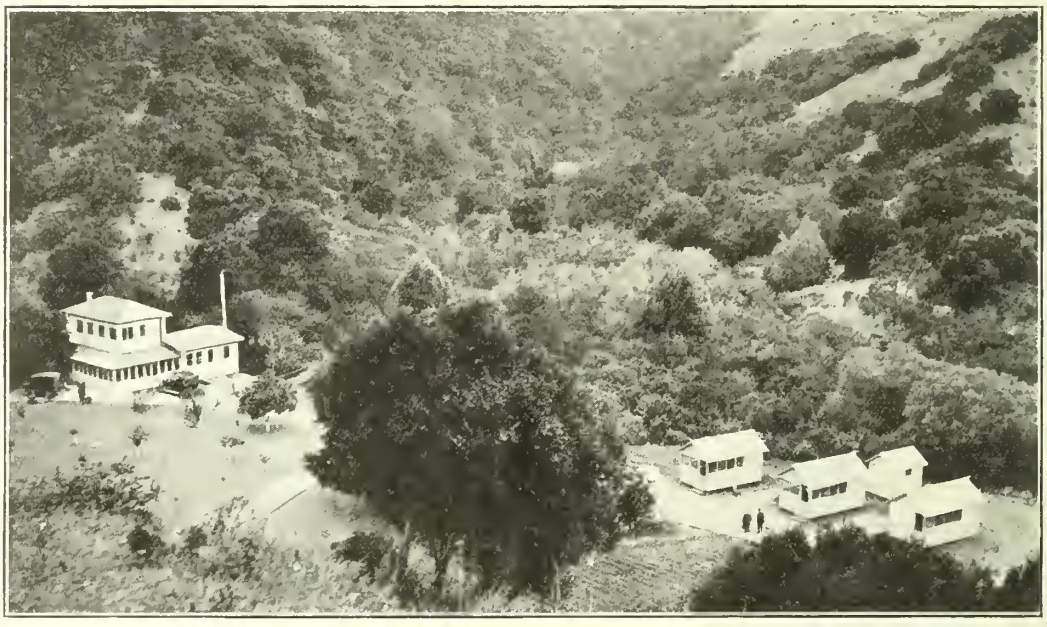

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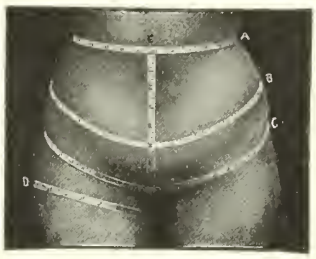

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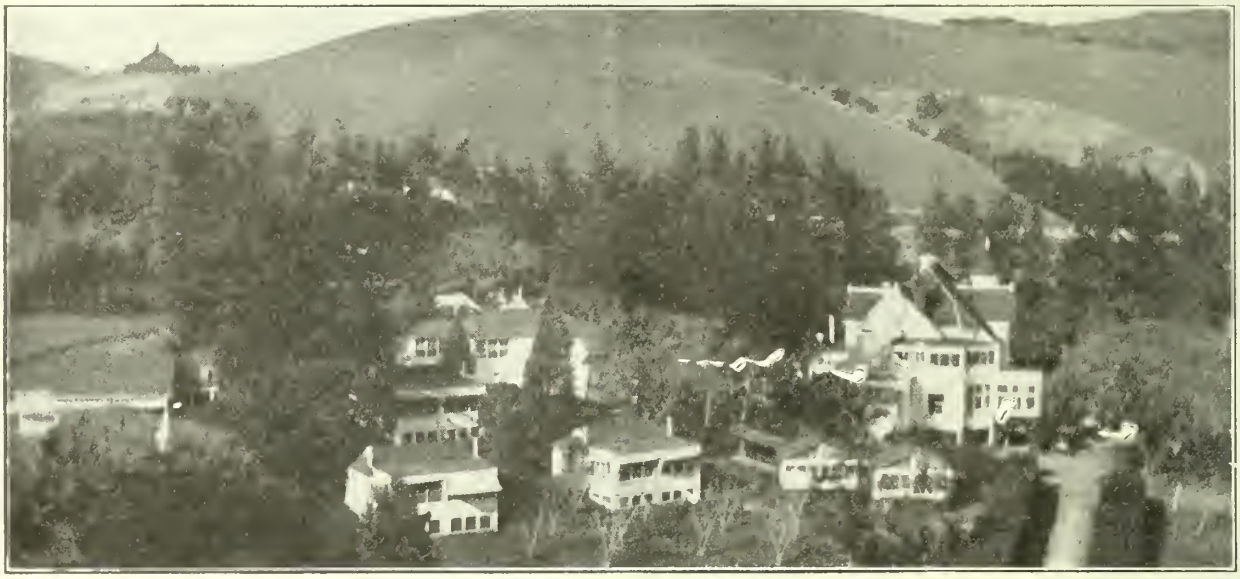

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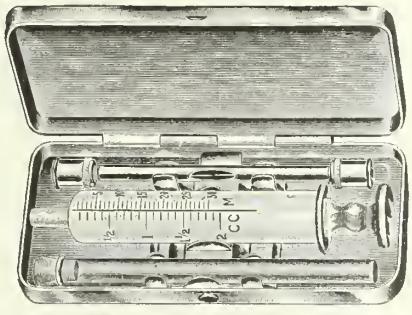

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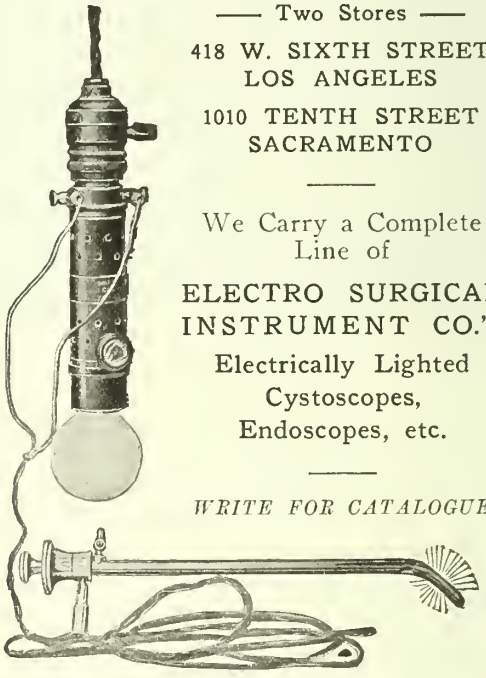

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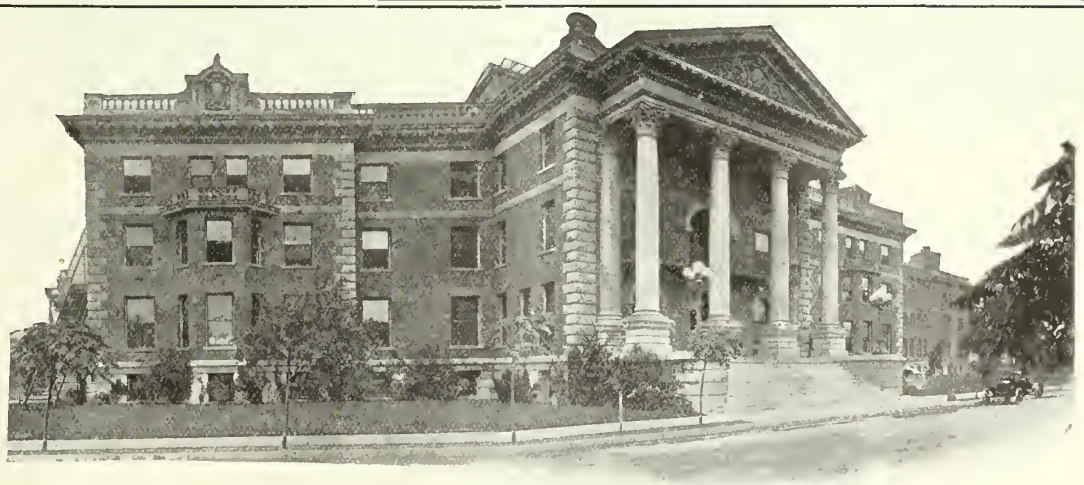

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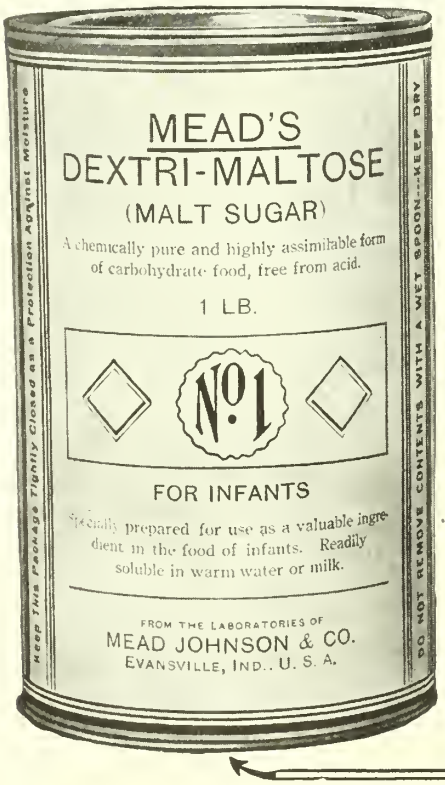
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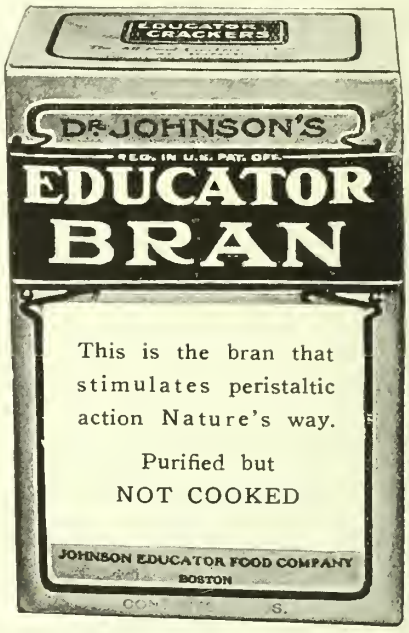

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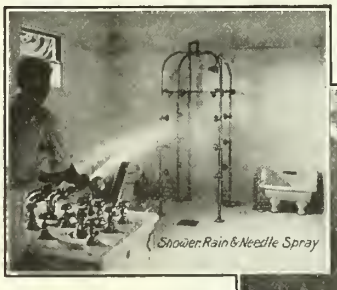

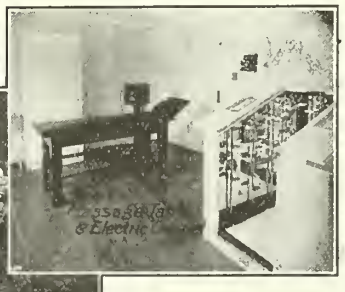

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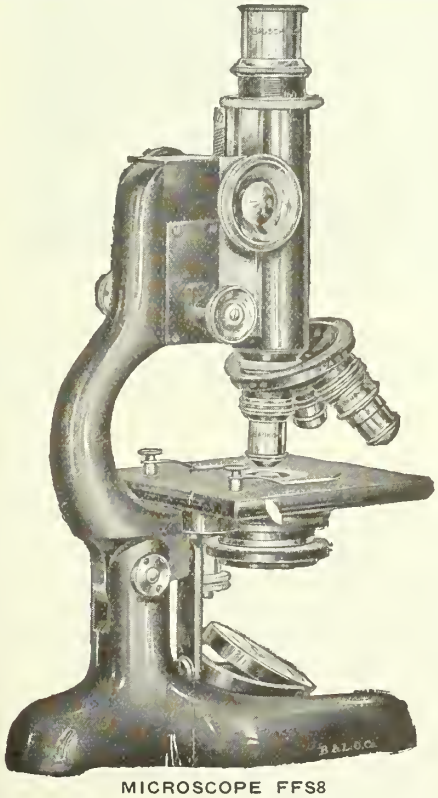

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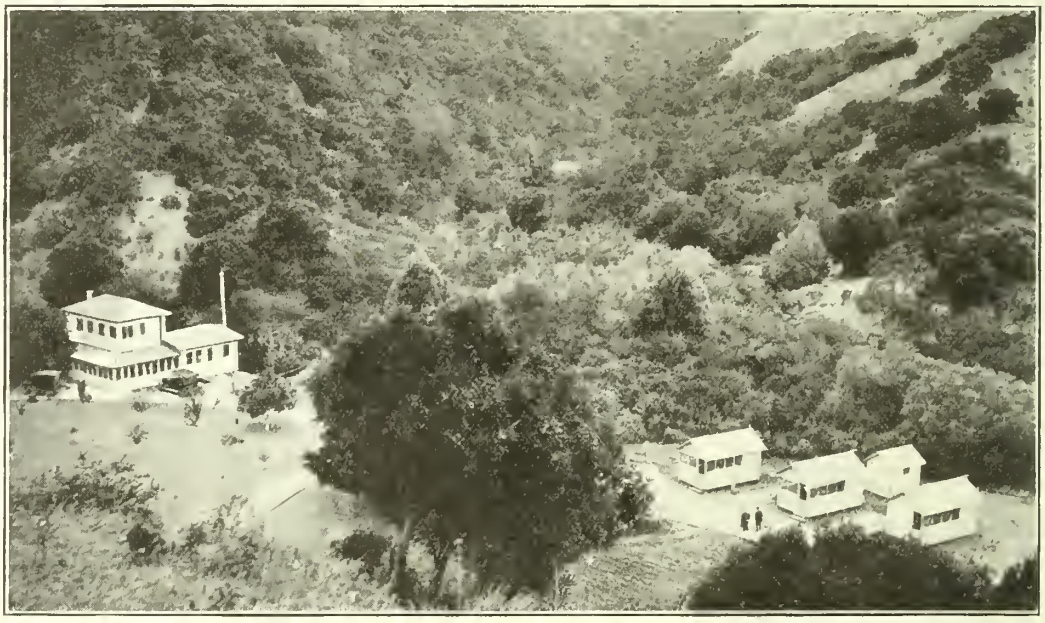

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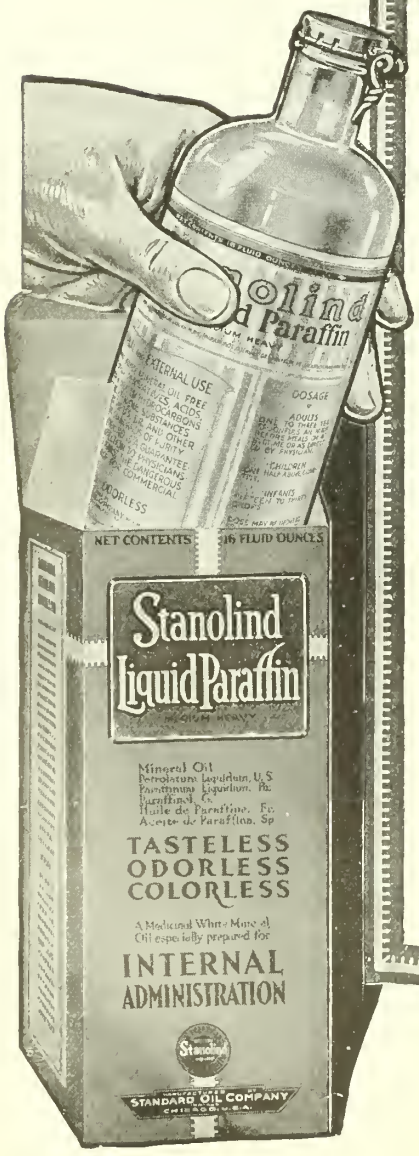

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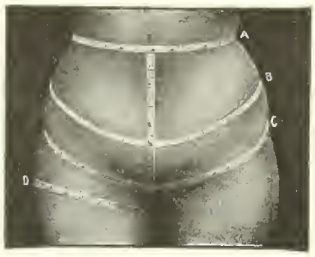

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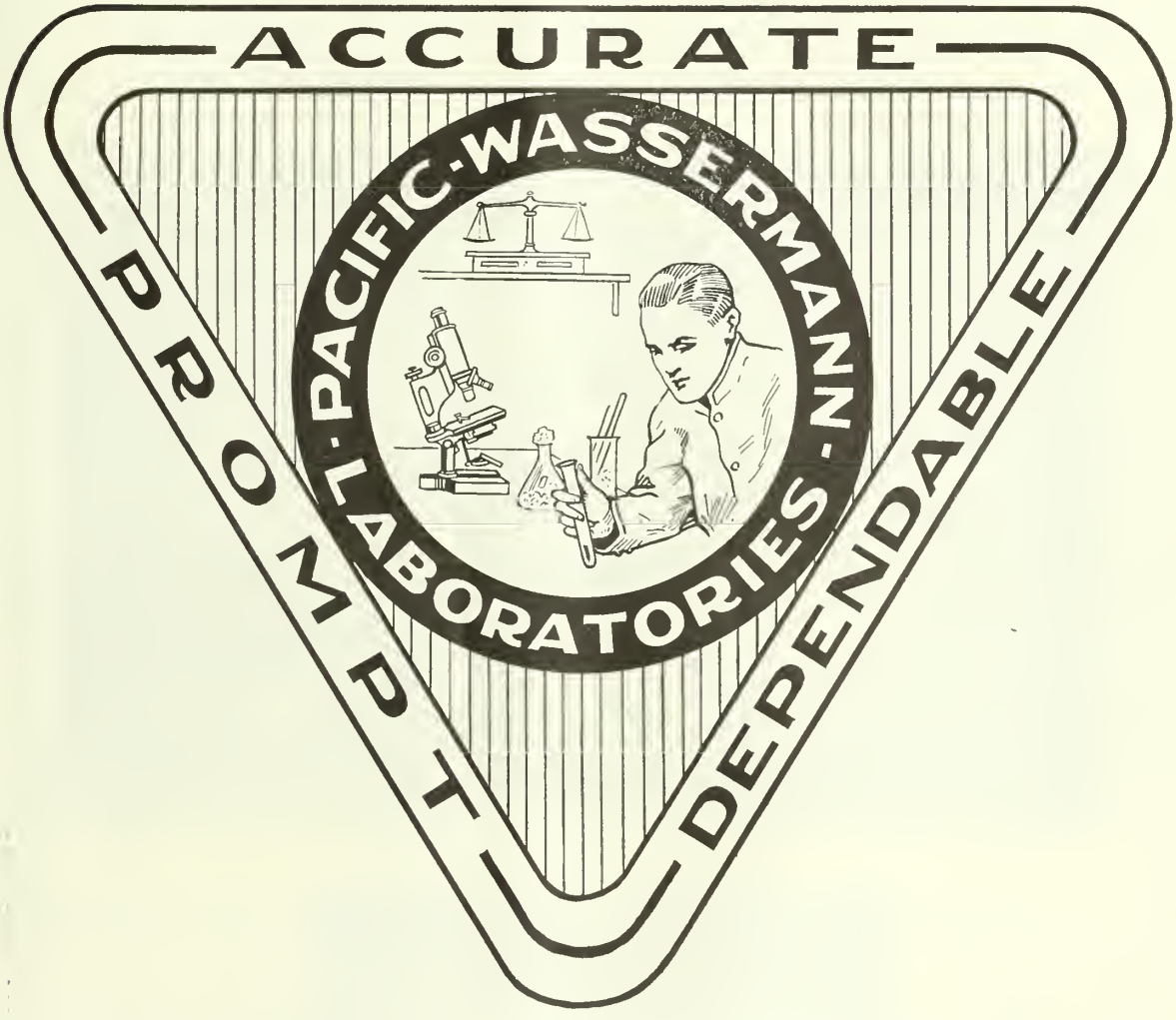

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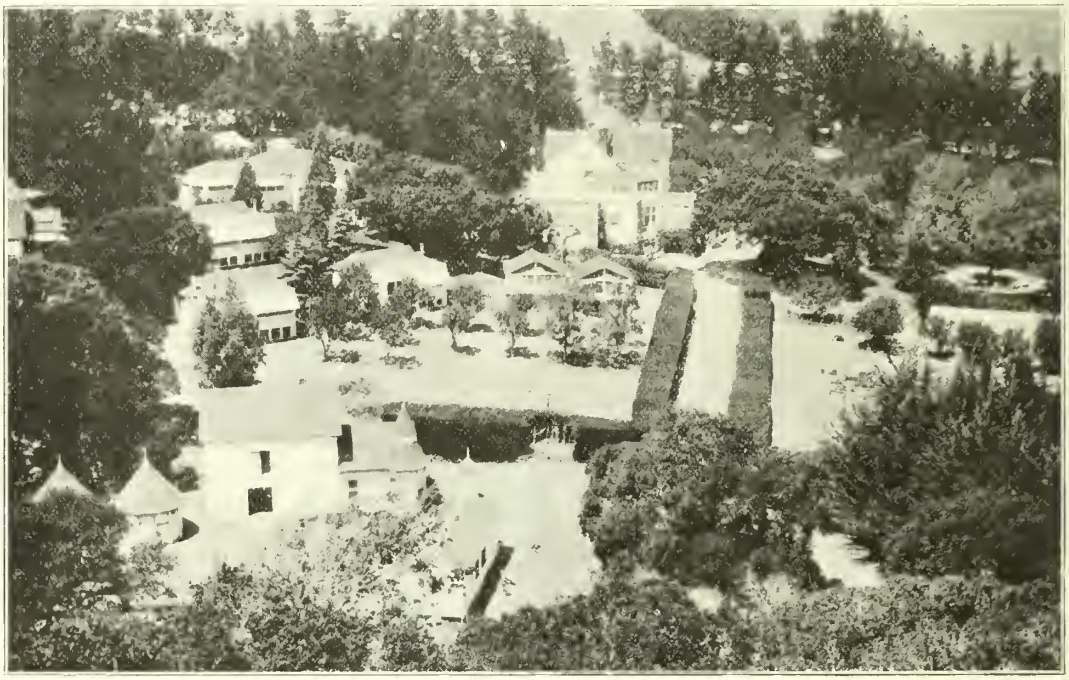

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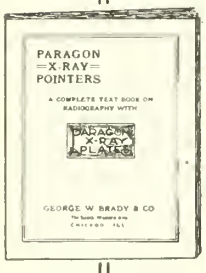

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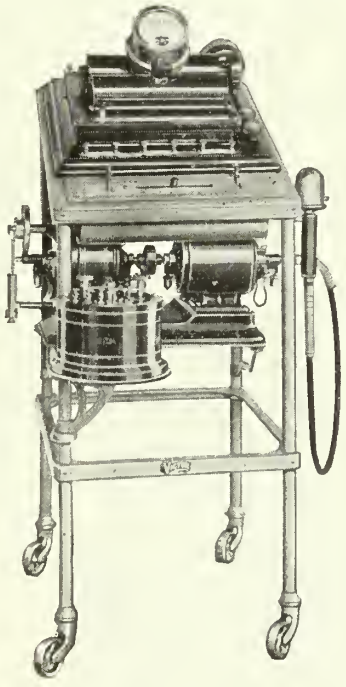

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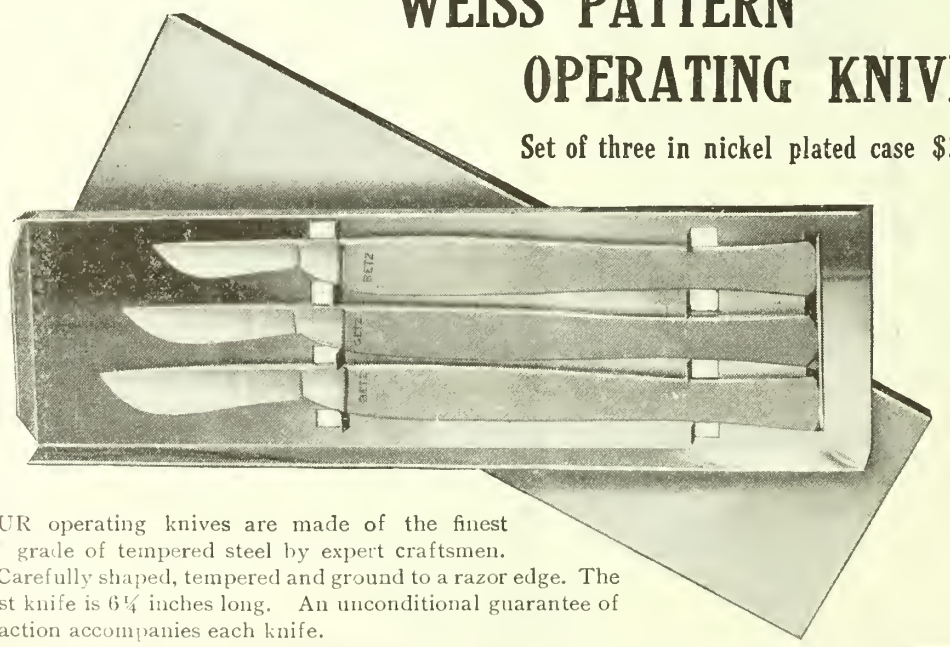

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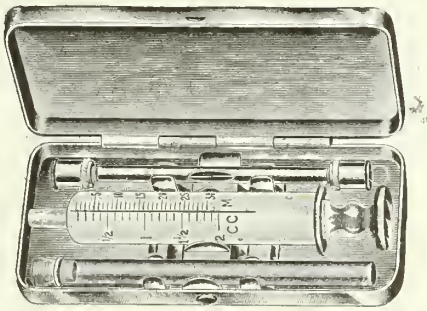

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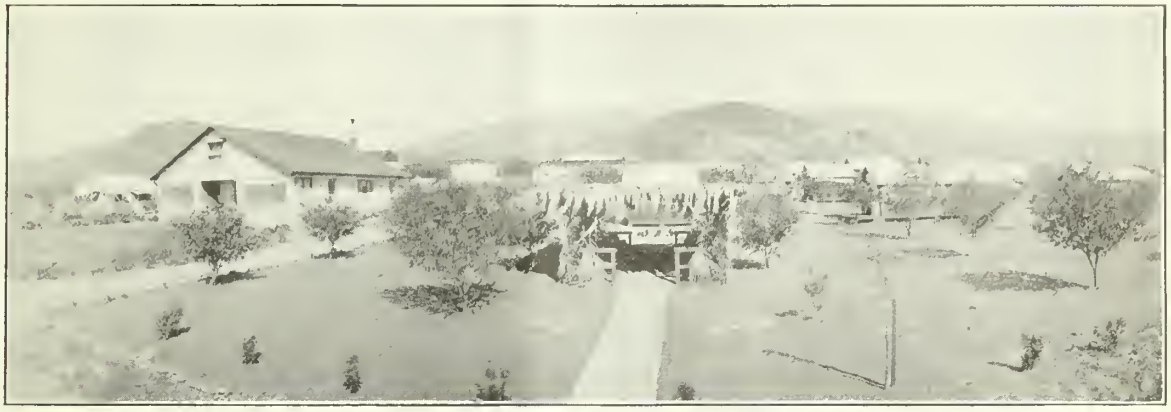

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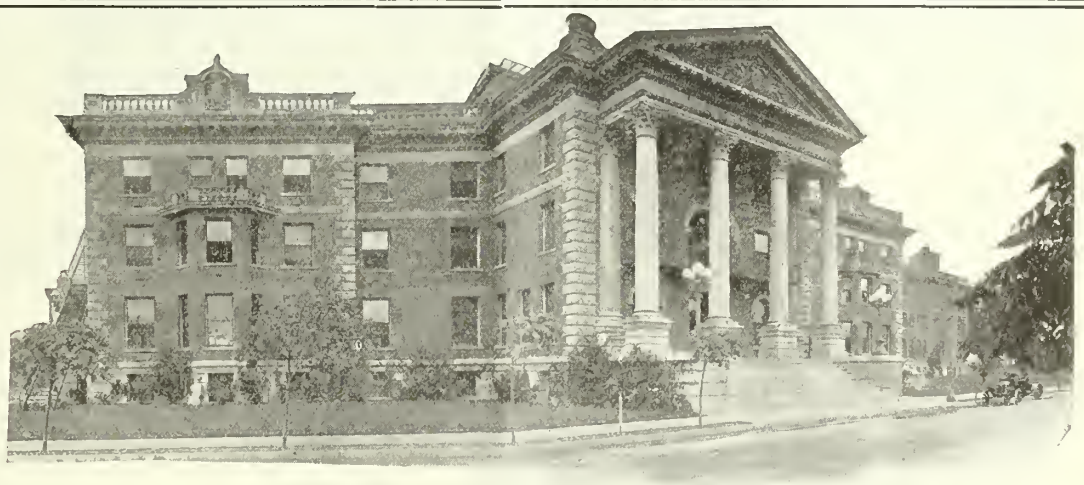

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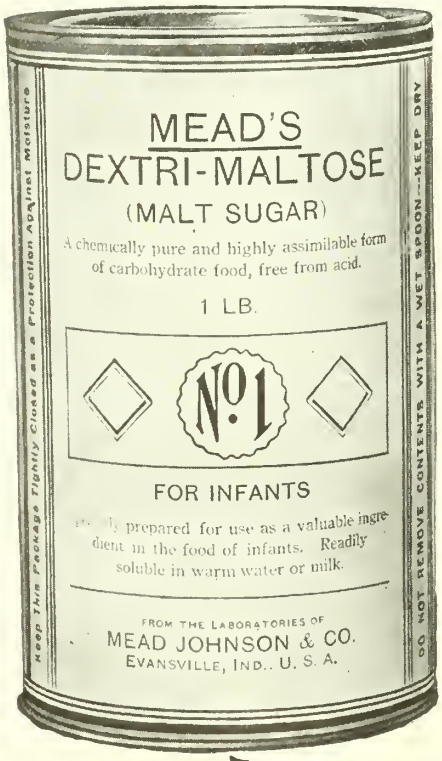
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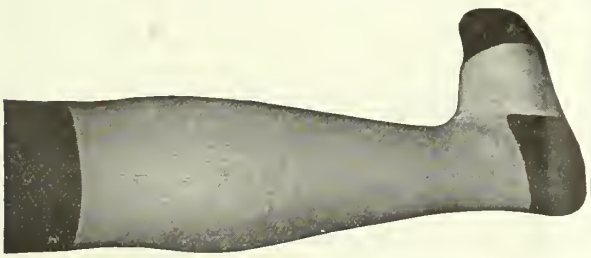

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Counties.	President.	Secretary.	Meets.
Alameda County Medical Association	R. T. Stratton, Oakland	Elmer E. Brinckerhoff, 1st Nat'l Bank Bldg.	3rd Tuesday, Oakland Hotel, Oakland.
Butte County Medical Society	J. O. Chiapella, Chico	E. E. Baumeister, Chico	2nd Tuesday.
Contra Costa County Medical Society	P. C. Campbell, Richmond	U. S. Abbott, Richmond	2d Sunday every month.
Fresno County Medical Society	J. L. Maupin, Fresno	Kenneth J. Staniford, Fresno	1st Tuesday.
Glenn County Medical Society	Saml. Iglick, Orland	Frank M. Lawson, Willows	
Humboldt County Medical Society	F. R. Horel, Arcata	L. A. Wing, Eureka	2d Tuesday.
Imperial County Medical Society	L. R. Moore, Imperial	L. C. House, El Centro	
Kern County Medical Society	A. I. Fraser, Bakersfield	C. A. Morris, Bakersfield	3d Monday.
Lassen-Plumas County Medical Society		R. W. T. Garner, Susanville	
Los Angeles County Medical Society	C. C. Browning, Los Angeles	Geo. H. Kress, Los Angeles	1st & 3d Thursday except July, Aug., Sept.
Marin County Medical Society	Waid J. Stone, San Rafael	Harry O. Hund, San Rafael	2d Thursday each month
Mendocino County Medical Society	F. C. Peirsol, Mendocino	O. H. Beckman, Fort Bragg	Meets quarterly.
Merced County Medical Society	D. W. Zirker, Merced	Jay Leroy Mudd, Merced	1st Thursday.
Monterey County Medical Society	H. C. Murphy, Salinas	T. C. Edwards, Salinas	1st Saturday.
Napa County Medical Society	Dr. E. Osborne, Napa	Otto T. Schulze, Napa	1st Tuesday.
Orange County Medical Association	R. A. Cushman, Santa Ana	W. C. Dubois, Santa Ana	1st Tuesday.
Placer County Medical Society	O. C. Hyde, Lincoln	R. E. Allen, Newcastle	1st Saturday every 2d month.
Riverside County Medical Society	W. S. Davis, Corona	A. E. Strong, Riverside	2d Monday.
Sacramento Society for Medical Improvement	C. B. Jones, Sacramento		3d Tuesday.
San Benito County Medical Society	L. C. Hull, Hollister	F. O. Nash, Hollister	1st Monday.
San Bernardino Medical Association	P. M. Savage, San Bernardino	Carroll C. Davis, San Bernardino	1st Tuesday.
San Diego County Medical Society	H. C. Oatman, San Diego	G. T. Courtenay, San Diego	1st and 3d Tuesdays.
San Francisco County Medical Society	A. H. Giannini, San Francisco	René Bine, San Francisco	Every Tuesday.
San Joaquin County Medical Society	C. R. Harry, Stockton	Dewey R. Powell, Stockton	4th Friday, except July and August.
San Luis Obispo County Medical Society	R. O. Dresser, Paso Robles	A. H. Wilmar, Paso Robles	1st Saturday of each month.
San Mateo County Medical Society	F. S. Gregory, Redwood City	J. L. Ross, Redwood City	1st Friday each month.
Santa Barbara County Medical Ass'n	C. S. Stoddard, Santa Barbara	R. M. Clarke, Santa Barbara	2d Monday.
Santa Clara County Medical Society	J. C. Blair, San Jose	Ed. Newell, San Jose	1st & 3d Wednesdays
Santa Cruz County Medical Society	H. E. Piper, Santa Cruz	A. N. Nittler, Davenport	1st Monday.
Shasta County Medical Society	F. Stabel, Dunsmuir	Ernest Dozier, Redding	Meets quarterly.
Siskiyou County Medical Society	C. W. Nutting, Etna Mills	H. R. Parker, Dunsmuir	Meets 1st Monday each quarter.
Solano County Medical Society	J. W. Brownlie, Vallejo	Paul Reilly, Vallejo	3d Wednesday.
Sonoma County Medical Society	M. B. McAulay, Petaluma	Elizabeth M. Yates, Santa Rosa	1st Friday.
Stanislaus County	F. R. De Lappe, Modesto	E. F. Reamer, Modesto	
Tehama County Medical Society	F. J. Bailey, Red Bluff	F. H. Bly, Red Bluff	
Tulare County Medical Society	R. N. Fuller, Tulare	A. W. Preston, Visalia	1st Tuesday
Tuolumne County Medical Society	C. E. Congdon, Jamestown	G. C. Wrigley, Sonora	
Ventura County Medical Society	W. J. Lewis, Ventura	C A. Jenson, Ventura	1st Monday.
Yolo County Society for Medical Improvement	H. D. Lawhead, Woodland	L. J. Beebe, Woodland	1st Tuesday, except July, Aug. and Sept.
Yuba-Sutter Counties Medical Society	Allen Gray, Marysville	A. L. Miller, Marysville	Meets every 2 months.

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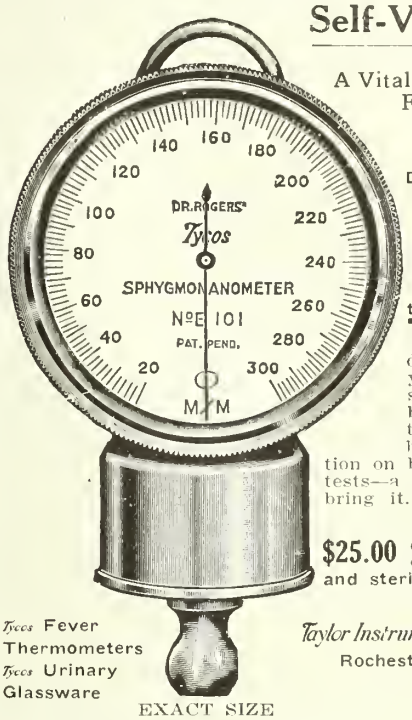

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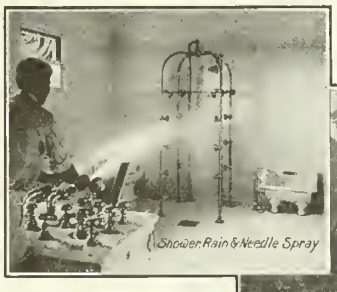

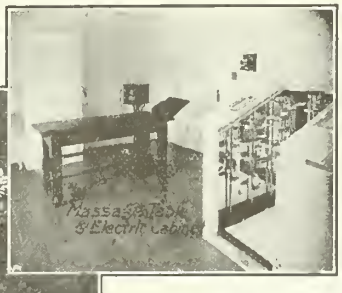

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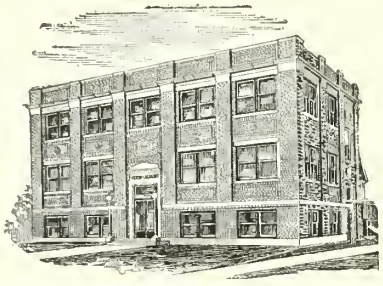

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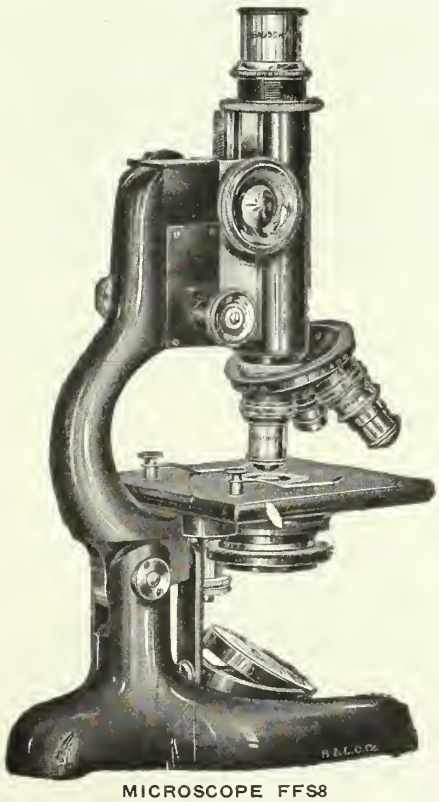

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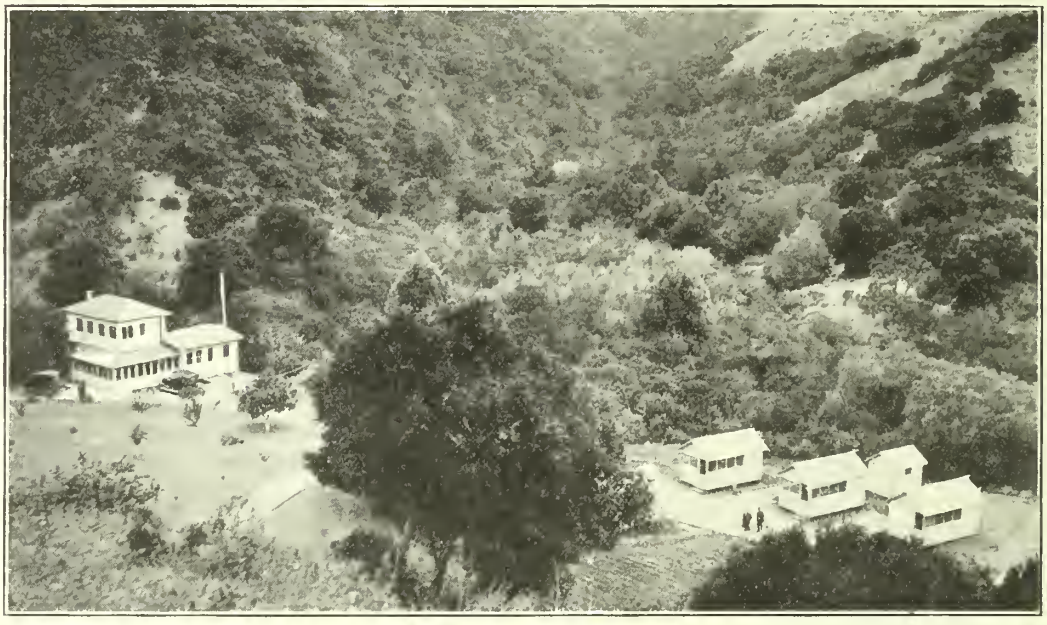

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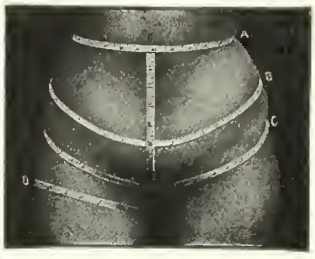

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ORTHOPEDIC APPLIANCES, TRUSSES and ELASTIC HOSIERY

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(a) Quality - - - - - - (z) Quality

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You will find in Malt-Nutrine valuable tonic properties due to the aromatic bitter principles of Saazer hops. You will also find the *food* value of more than 14 per cent. of pure malt extract. The ingredients of Malt-Nutrine are carefully and properly chosen to constitute a real food tonic and are combined through scientific processes under the direction of competent chemists.

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Malt-Nutrine
TRADE MARK.

is the recognized standard of medicinal malt preparations. It is extensively prescribed by physicians as a food-tonic for nursing mothers, protracted convalescence from acute diseases, insomnia and many other conditions. Do *not* confuse it with cheap dark beers.

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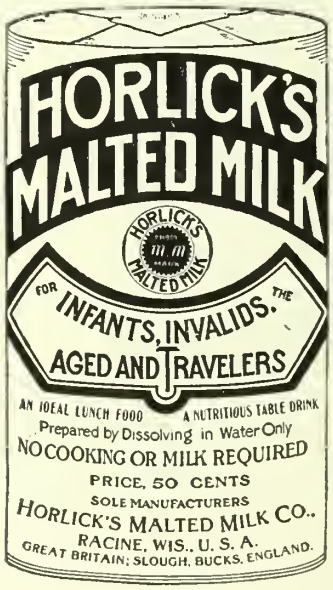

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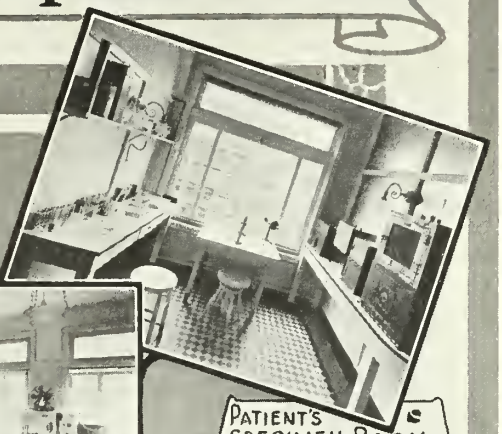
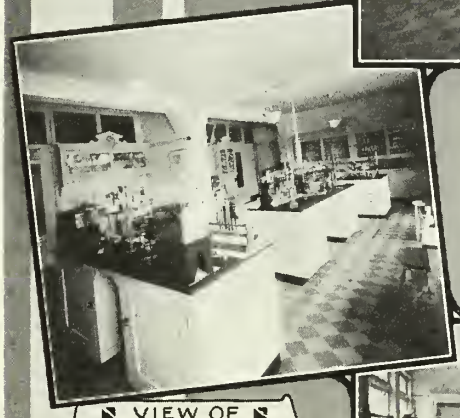


PATIENT'S SPECIMEN ROOM



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VIEW OF GENERAL LABORATORY

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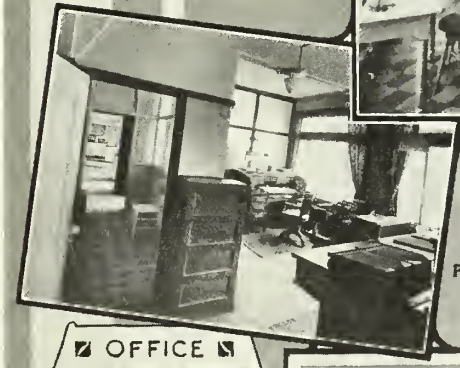

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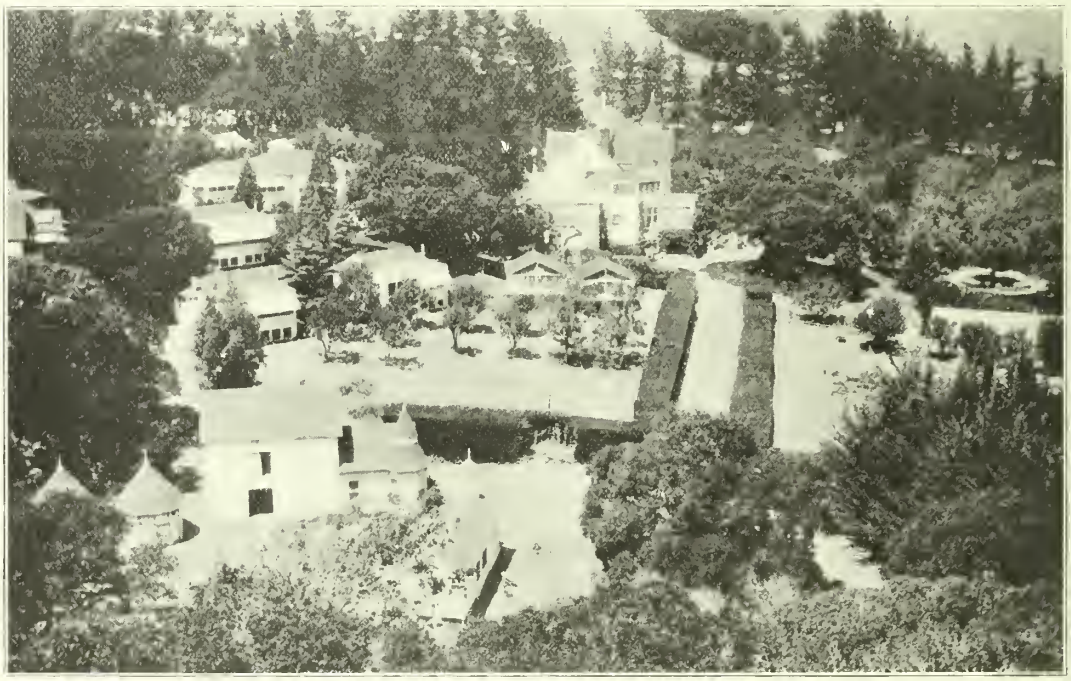

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Salvarsan is now being made in our new Brooklyn laboratories under the supervision of Dr. G. P. Metz, who was instructed in the processes of manufacture at Hoechst, Germany.

It corresponds in every detail to the standards set by the late Professor Dr. Paul Ehrlich, and is the only product made by the processes used at the Hoechst works.

As is well known, the slightest irregularity in the process of manufacture of Salvarsan may cause the formation in it of toxic by-products. In order to protect the public and ourselves against the effects of any accidental irregularities in manufacture, we ascertain toxicologically whether or not each lot of Salvarsan prepared by us is free from such toxic by-products. This knowledge is obtained for us by the head of the Department of Biological Chemistry in one of our leading university medical schools, who bears the same judicial attitude to our preparations that Prof. Ehrlich did to the standard German preparations, and who subjects our preparations to biological tests that he considers more rigorous and comprehensive than those adopted for this purpose by Prof. Ehrlich himself. We will market only such lots of Salvarsan as have been thoroughly tested by this biological chemist and pronounced by him to be free from injurious by-products. The name of our biochemical collaborator will be given to any who may wish to consult us regarding the nature and results of his tests of our preparations. Thus far his tests have demonstrated that the preparations of Salvarsan made by us were fully equal to standard Ehrlich preparations in their freedom from toxic by-products.

This American-made Salvarsan will be sold to the medical profession direct, until local agencies have been satisfactorily established. The price to physicians will be $2.00 for the 0.6 gram size, with lower prices for the smaller sizes. The price to hospitals and dispensaries for clinical and charity use will be $1.50 per ampule of 0.6, in 50 and 100 ampule containers.

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$2.00 per Ampule for Dose Number Six; Smaller Doses in proportion.

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Complete Sterilized Apparatus (Luer Syringe or Gravity Outfit), including Freshly Double-Distilled Water, Sterile Salt Solution, etc., at $1.50 plus delivery in San Francisco. An additional charge is made for out-of-town shipment. Double-Distilled Water and Sterile Salt Solution 50c. per flask.

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The cottage colony of the Colfax School for the Tuberculous provides accommodations for patients who have not only all the advantages of the sanatorium regime and supervision but at the same time have the benefit of home cooking and surroundings. While the patient improves the other members of the family daily receive instructions relative to those things everyone should know regarding tuberculosis.

Information regarding the methods of treatment and other details of interest to the physician and his patient are given in a booklet which will be sent on request.

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Colfax, California

Typhoid-Paratyphoid Prophylaxis

Vaccination against Typhoid will not protect against Paratyphoid infection.

The incidence of Paratyphoid infection is more considerable than is generally thought.

It has been well established that a mixed vaccine containing Bac. Typhosus (killed) and Bac. Paratyphosus "A" and "B" (killed) produces a high degree of immunity against each organism.

Therefore, combined immunization treatment is preferable to the single immunization against Bac. Typhosus only.

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In ready-to-use syringe is the ideal method of immunization.

One (graduated) syringe (containing enough for three injections, one full immunizing treatment) with three sterile needles. $1.00

Bulk Packages

Packages of three bottles (one full immunizing treatment) ... 1.00

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We also furnish Typhoid Prophylactic (for immunizing against Bac. Typhosus only) in the ready-to-use syringe and bulk packages at same prices.

When ordering from your druggist, specify whether Typhoid, or Typhoid-Paratyphoid, and style of package wanted, and please specify "Cutter's."

Write for new booklet, "The Prophylactic and Therapeutic use of Typhoid Vaccine."

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MELLIN'S FOOD
4 level tablespoonfuls
SKIMMED MILK
8 fluidounces
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Analysis:

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Protein	2.28
Carbohydrates	6.59
Salts	.58
Water	90.06
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USES: Where iodids are indicated, especially in tertiary syphilis—bone lesions, ulcers, gummata of brain and other organs, locomotor ataxia, neuritis, skin lesions. Also in arteriosclerosis especially with high blood tension; asthma; acne; chronic rheumatism.

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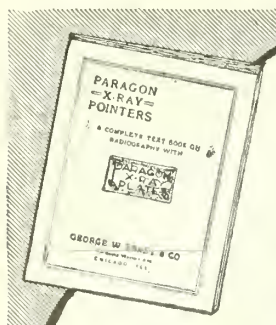
W. A. George, M. D., Surgeon
J. J. Weir, M. D., Eye, Ear, Nose and Throat
A. W. Truman, M. D., Nervous Diseases
Fred Herzer, M. D., Laboratory
Zenobia E. Nightengale, M. D., General Medicine

LIST OF PRESIDENTS AND SECRETARIES OF COUNTY MEDICAL SOCIETIES

Counties.	President.	Secretary.	Meets.
Alameda County Medical Association	R. T. Stratton, Oakland	Elmer E. Brinckerhoff, 1st Nat'l Bank Bldg.	3rd Monday, Oakland Hotel, Oakland.
Butte County Medical Society	J. O. Chiapella, Chico	E. E. Baumeister, Chico	2nd Tuesday.
Contra Costa County Medical Society	P. C. Campbell, Richmond	U. S. Abbott, Richmond	2d Sunday every month.
Fresno County Medical Society	J. L. Maupin, Fresno	Kenneth J. Staniford, Fresno	1st Tuesday.
Glenn County Medical Society	Saml. Iglick, Orland	Frank M. Lawson, Willows	
Humboldt County Medical Society	F. R. Horel, Arcata	L. A. Wing, Eureka	2d Tuesday.
Imperial County Medical Society	L. R. Moore, Imperial	L. C. House, El Centro	
Kern County Medical Society	A. I. Fraser, Bakersfield	C. A. Morris, Bakersfield	3d Monday.
Lassen-Plumas County Medical Society		R. W. T. Garner, Susanville	
Los Angeles County Medical Society	C. C. Browning, Los Angeles	Geo. H. Kress, Los Angeles	1st & 3d Thursday except July, Aug., Sept.
Marin County Medical Society	Waid J. Stone, San Rafael	Harry O. Hund, San Rafael	2d Thursday each month
Mendocino County Medical Society	F. C. Peirsol, Mendocino	O. H. Beckman, Fort Bragg	Meets quarterly.
Merced County Medical Society	D. W. Zirker, Merced	Jay Leroy Mudd, Merced	1st Thursday.
Monterey County Medical Society	H. C. Murphy, Salinas	T. C. Edwards, Salinas	1st Saturday.
Napa County Medical Society	Dr. E. Osborne, Napa	Otto T. Schulze, Napa	1st Tuesday.
Orange County Medical Association	R. A. Cushman, Santa Ana	W. C. Dubois, Santa Ana	1st Tuesday.
Placer County Medical Society	O. C. Hyde, Lincoln	R. E. Allen, Newcastle	1st Saturday every 2d month.
Riverside County Medical Society	W. S. Davis, Corona	A. E. Strong, Riverside	2d Monday.
Sacramento Society for Medical Improvement	C. B. Jones, Sacramento	W. A. Beattie, Sacramento	3d Tuesday.
San Benito County Medical Society	L. C. Hull, Hollister	F. O. Nash, Hollister	1st Monday.
San Bernardino Medical Association	P. M. Savage, San Bernardino	Carroll C. Davis, San Bernardino	1st Tuesday.
San Diego County Medical Society	H. C. Oatman, San Diego	G. T. Courtenay, San Diego	1st and 3d Tuesdays.
San Francisco County Medical Society	A. H. Giannini, San Francisco	René Bine, San Francisco	Every Tuesday.
San Joaquin County Medical Society	C. R. Harry, Stockton	Dewey R. Powell, Stockton	4th Friday, except July and August.
San Luis Obispo County Medical Society	R. O. Dresser, Paso Robles	A. H. Wilmar, Paso Robles	1st Saturday of each month.
San Mateo County Medical Society	F. S. Gregory, Redwood City	J. L. Ross, Redwood City	1st Friday each month.
Santa Barbara County Medical Ass'n	S. P. Low, Santa Barbara	R. M. Clarke, Santa Barbara	2d Monday.
Santa Clara County Medical Society	J. C. Blair, San Jose	Ed. Newell, San Jose	1st & 3d Wednesdays
Santa Cruz County Medical Society	H. E. Piper, Santa Cruz	A. N. Nittler, Davenport	1st Monday.
Shasta County Medical Society	F. Stabel, Dunsmuir	Ernest Dozier, Redding	Meets quarterly.
Siskiyou County Medical Society	C. W. Nutting, Etna Mills	H. R. Parker, Dunsmuir	Meets 1st Monday each quarter.
Solano County Medical Society	J. W. Brownlie, Vallejo	Paul Reilly, Vallejo	3d Wednesday.
Sonoma County Medical Society	M. B. McAulay, Petaluma	Elizabeth M. Yates, Santa Rosa	1st Friday.
Stanislaus County	F. R. De Lappe, Modesto	E. F. Reamer, Modesto	
Tehama County Medical Society	F. J. Bailey, Red Bluff	F. H. Bly, Red Bluff	
Tulare County Medical Society	R. N. Fuller, Tulare	A. W. Preston, Visalia	1st Tuesday
Tuolumne County Medical Society	C. E. Congdon, Jamestown	G. C. Wrigley, Sonora	
Ventura County Medical Society	W. J. Lewis, Ventura	C. A. Jenson, Ventura	1st Monday.
Yolo County Society for Medical Improvement	H. D. Lawhead, Woodland	L. J. Beebe, Woodland	1st Tuesday, except July, Aug. and Sept.
Yuba-Sutter Counties Medical Society	Allen Gray, Marysville	A. L. Miller, Marysville	Meets every 2 months.

N. B.—Secretaries will please notify Journal office of any changes taking place in their respective counties.



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A lobster and some prunes,
A glass of milk, a piece of pie,
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It made the naughty waiters grin
To see her order so,
And when they carried Mary out
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London paper says: "The English laugh at Zeppelins."

It is unbelievable, when you consider that the joke is over their heads, too.

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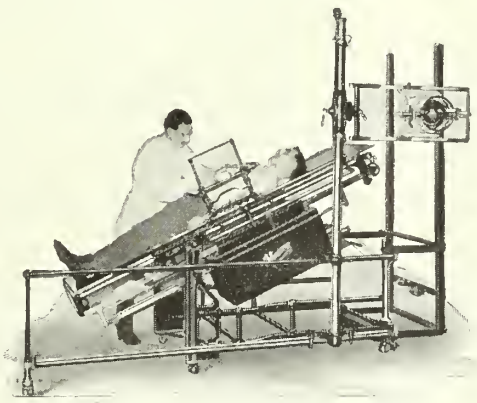
Every Surgeon and Every Physician

should make available to himself the help of *Roentgen Diagnosis.* It is a duty he owes to the community which he serves, and is a measure of preparedness for possible emergency in these war times.



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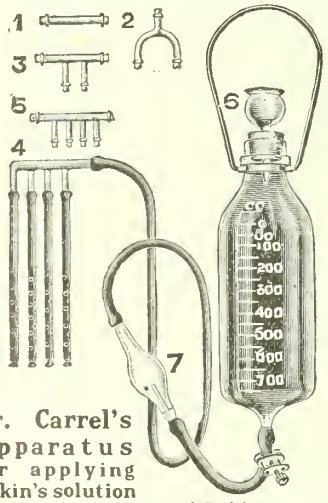

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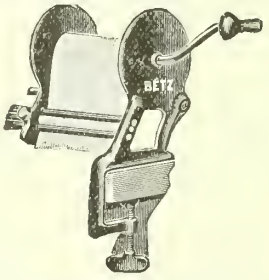

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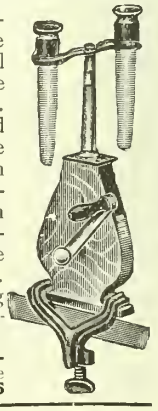

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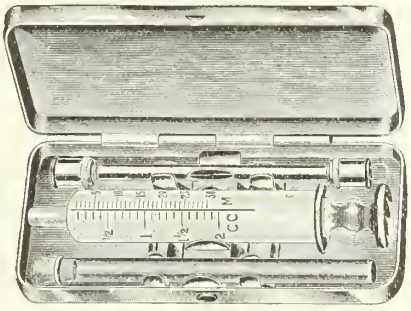

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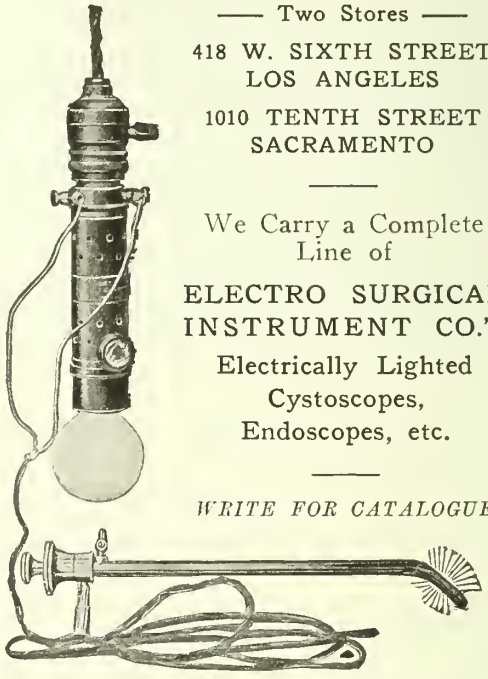

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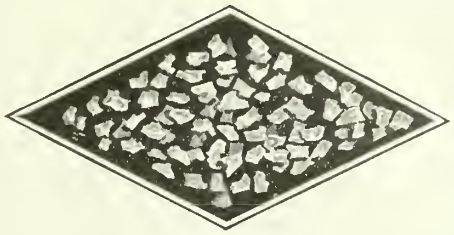

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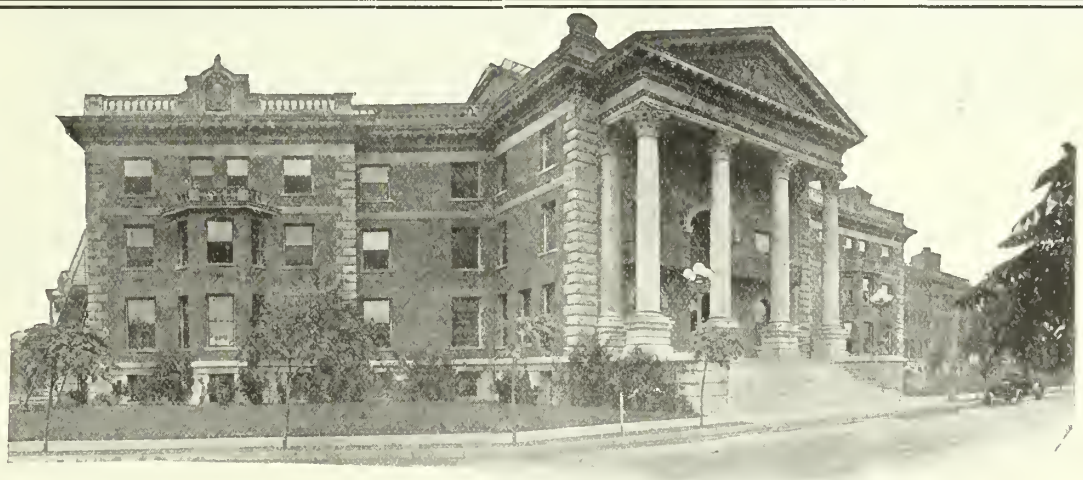

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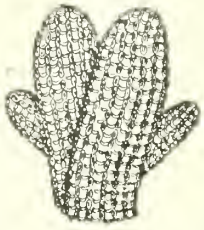

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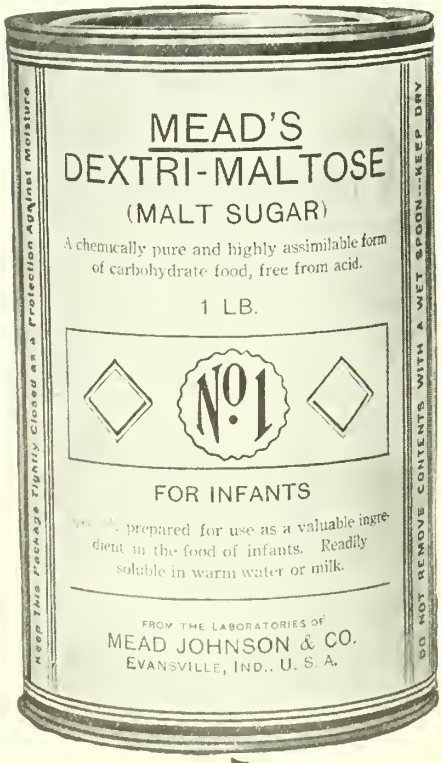
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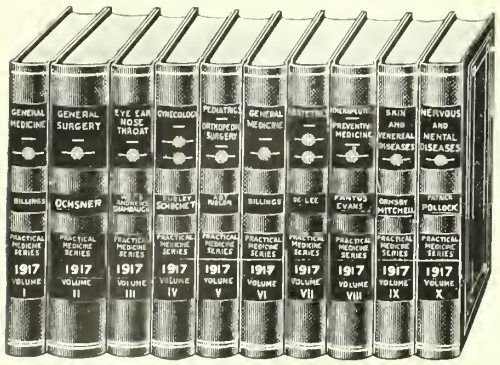

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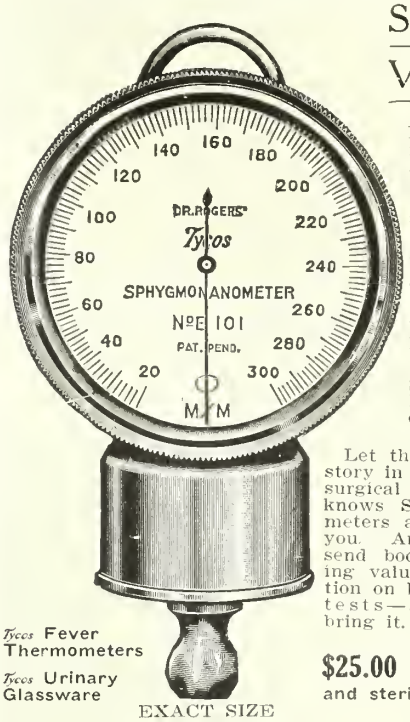

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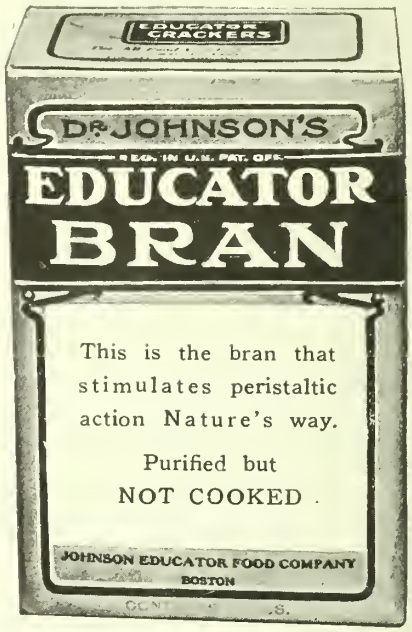

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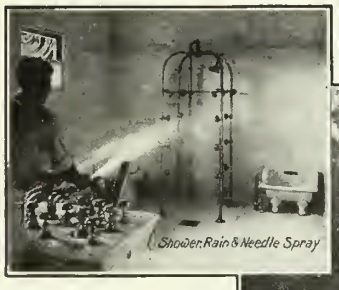

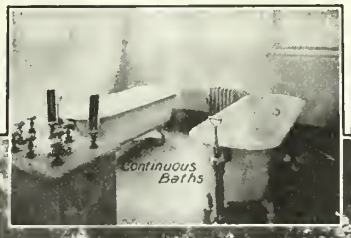

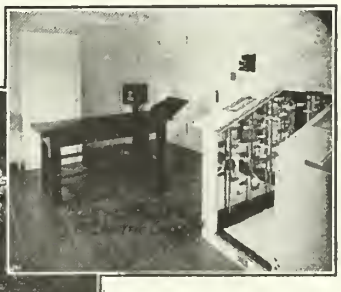

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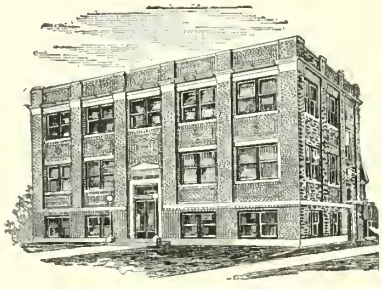

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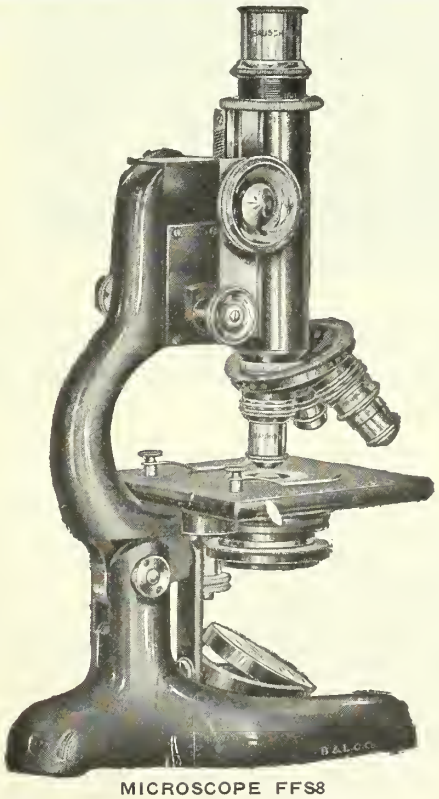

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CALIFORNIA STATE JOURNAL OF MEDICINE

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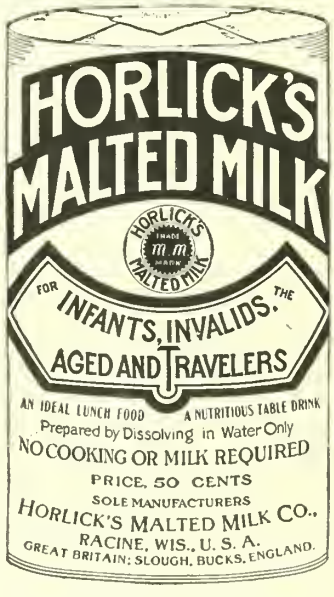

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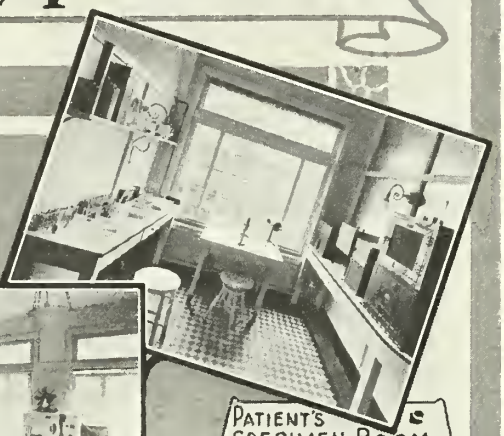

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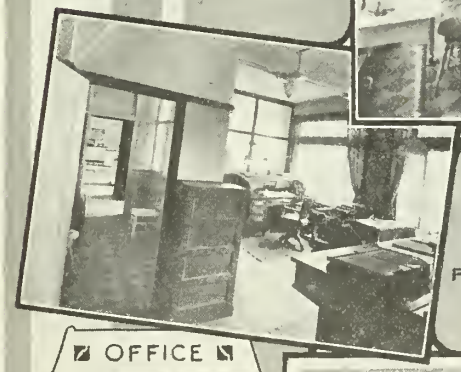

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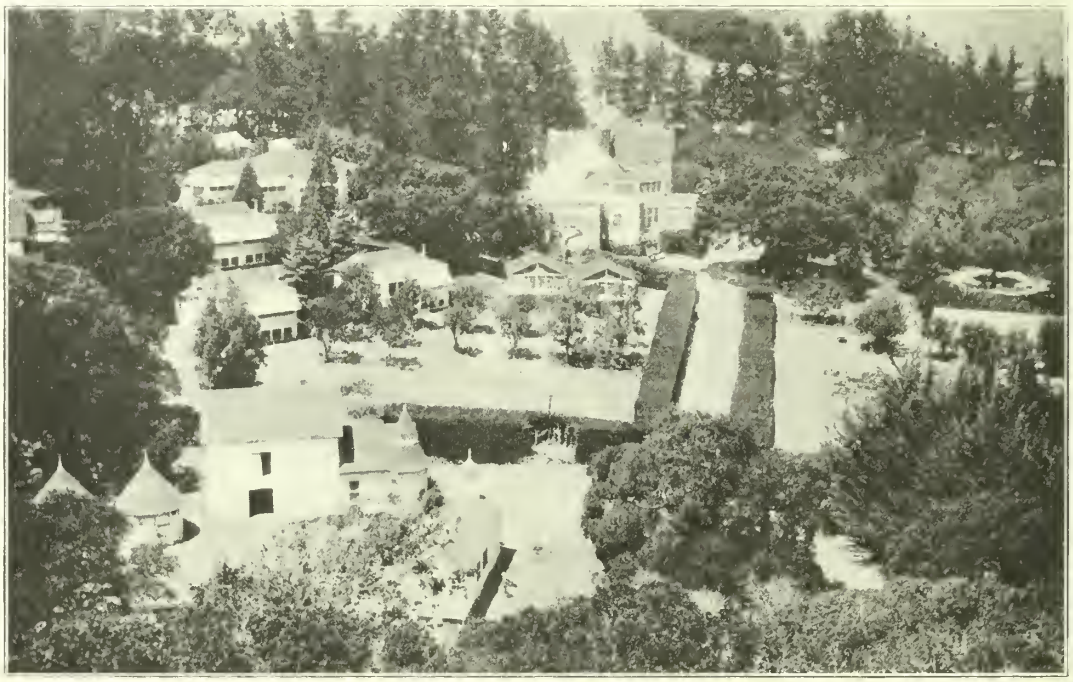

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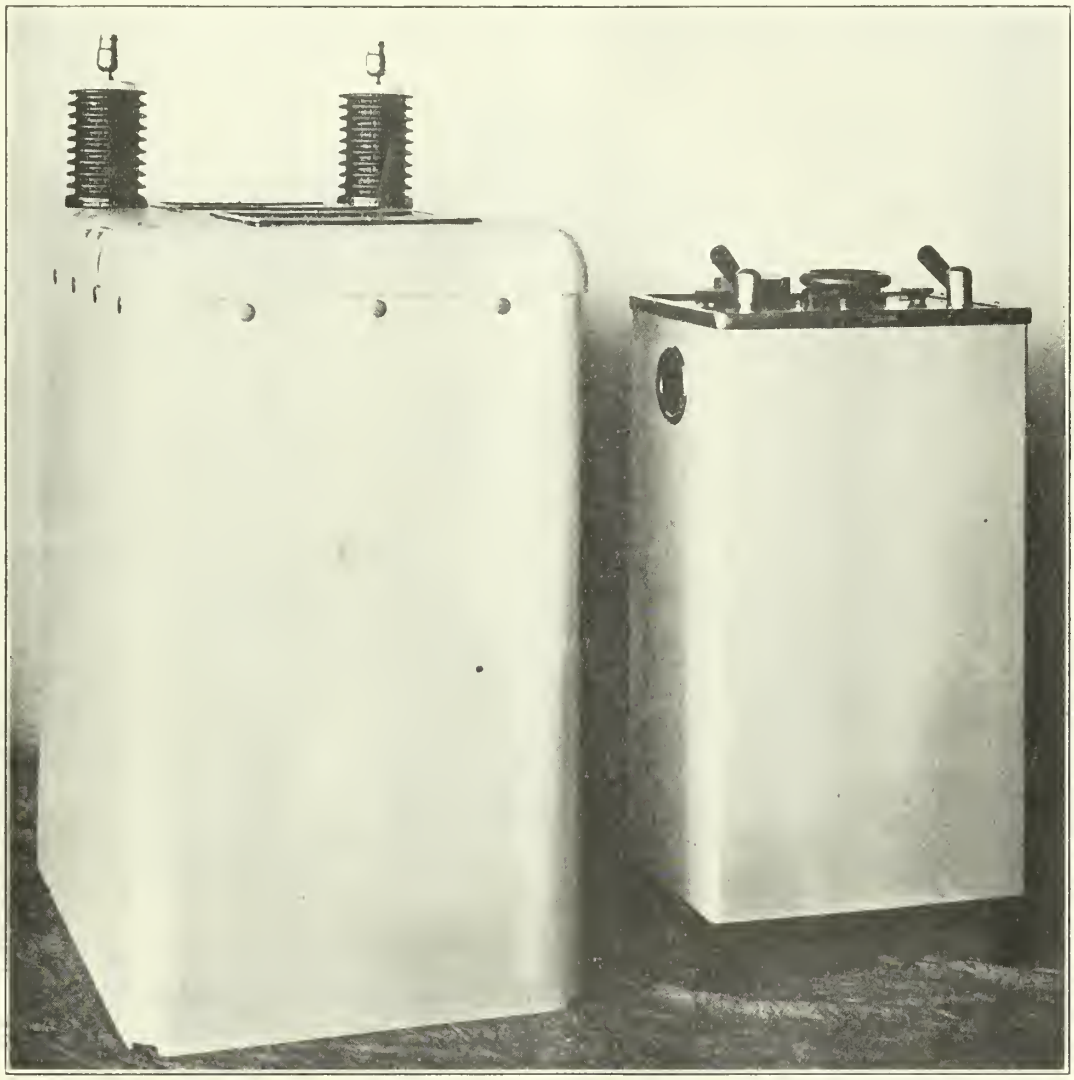

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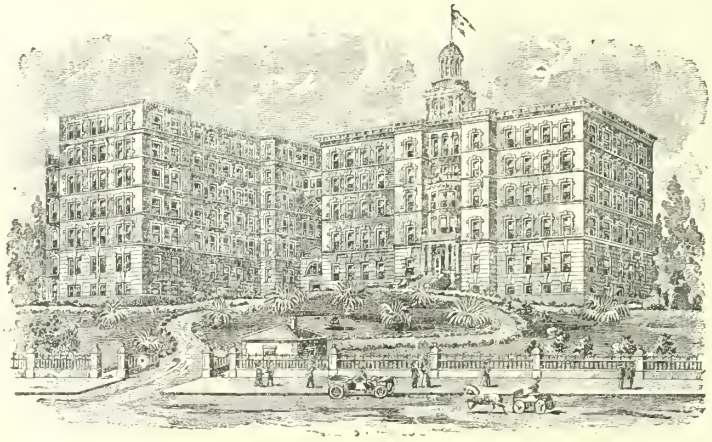

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AN EDDYFYING RHYME.

By J. LIFTCHILD, M. D.

Mary Baker Eddy said,

"It is needless to be dead;
Keep on living, if you please,
I assert there's no disease.
Buy my book, t'will cost you five,
And forever keep alive.
Be like Rider Haggard's 'She,'
And the Wandering Jew, or me."

Mary Baker Eddy shuffled
Off this coil of life unruffled;
Said, while breathing her last sigh,
"There is no such word as die."
Yet, while claiming to be well,
Her remains began to smell;
And they thought that it would calm her
If they sent for an embalmer.
Nothing in this world is real,
There's no earth and there's no sheol.

Finally to dust converted,
Not a moment disconcerted,
Mary Baker Eddy said,
"You can see that I'm not dead;
One to ills can bid defiance,
If they read my book on 'Science.'
I have not been sick a day,
What you see is not decay,
It is all imagination,
There is no disintegration,
Keep your mind from error free
And be strong and well like me."

"He was to have met me here, but he hasn't come."

The policeman, of course, accepted the explanation, and let him go, whereupon the boy retreated twenty paces, struck a derisive attitude, and yelled, "And whom did you mean by 'the booby'?"—The Christian Register.

Posthumous Honors.

"Henry Clay was a gr-ate man, Cassidy."

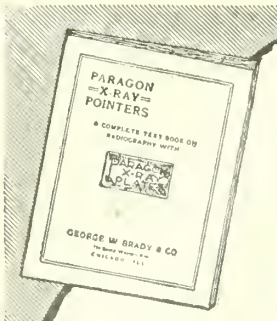
"He wor thot, Mulligan."

"So grate thot he had a cigar named after him, Cassidy."

"An' a poipe, too, Mulligan."—Boston Evening Transcript.

CHRISTIAN SCIENCE.

I woke up.
It was
Cold.
Hotels
Never
Put enough
Blankets on
The beds.
I found that
The door was Open.
So I closed it.
I was all
Right then.
But I don't
Know why.
Because I
Had only
Closed the
Closet door.—Record.



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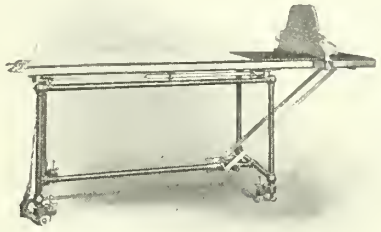
"Loaf sugar might."—Kansas City Journal.

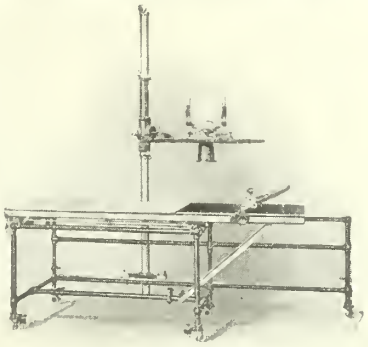
Two old colored mammies who worked as charwomen in a southern clinic were guilty of the following conversation one day:

Aunt Mary—Martha, who am dat impregnated lookin' man urinatin' up and down de aisles?

Aunt Martha—Don' you know, honey? Dat am de new rectum ob de church an' dey say he am a moughty constipated man.

VICTOR





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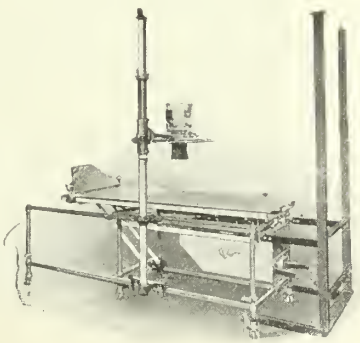

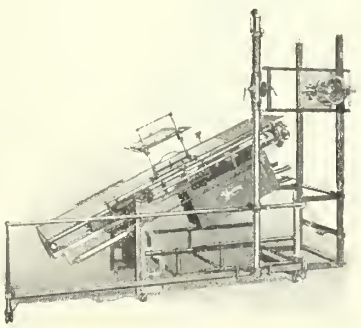

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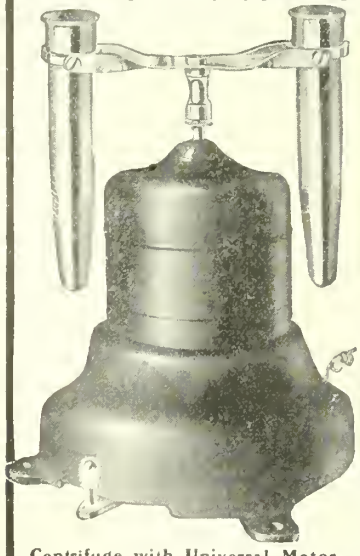

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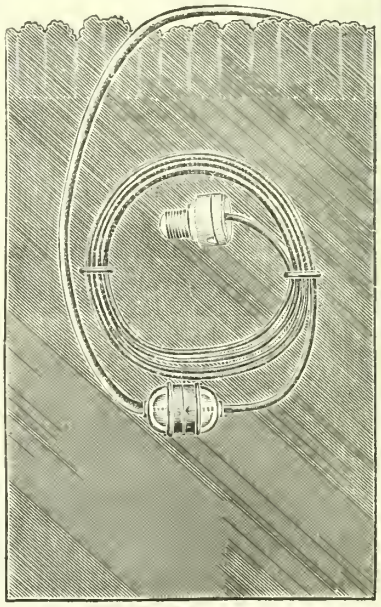

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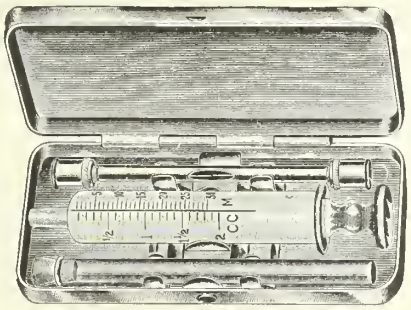

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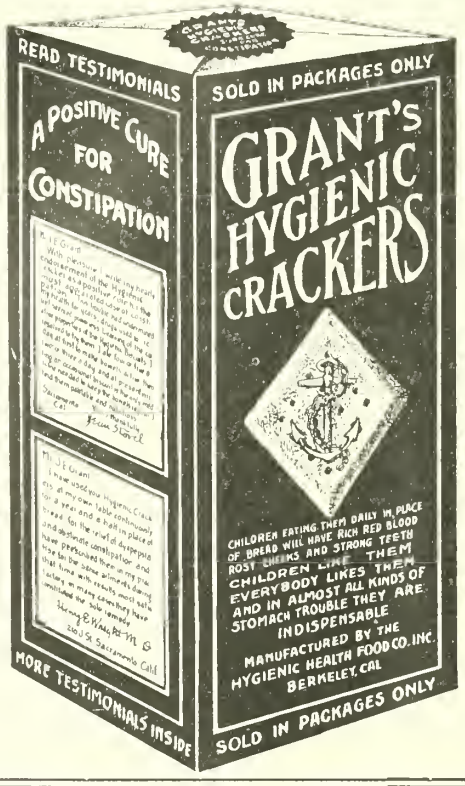
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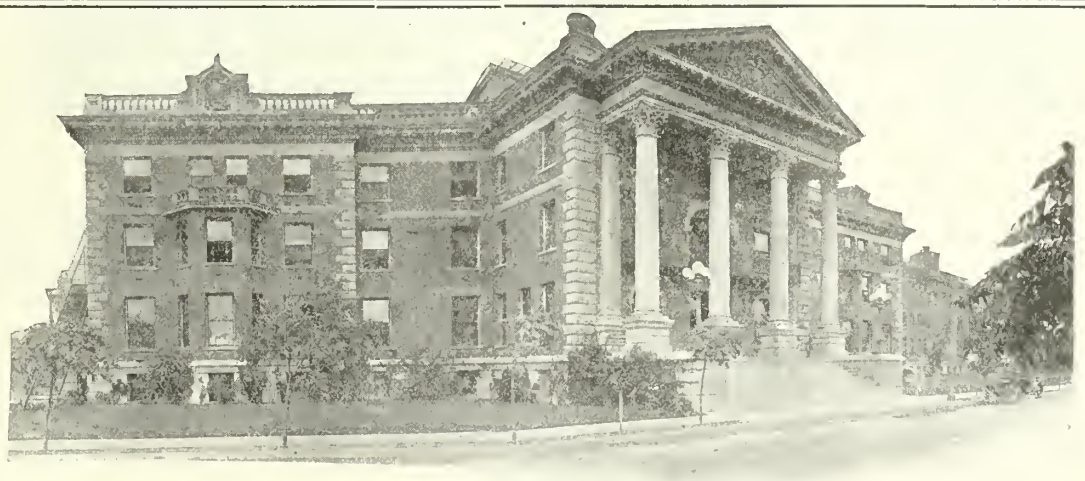

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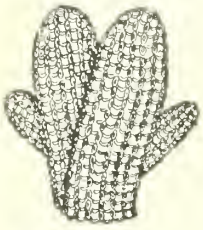

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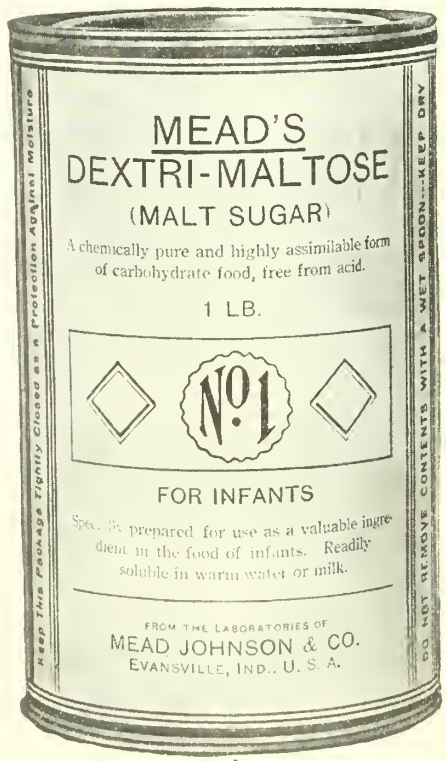
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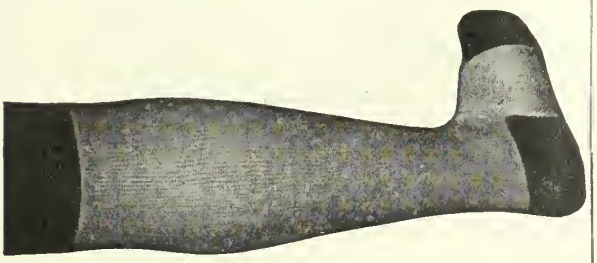

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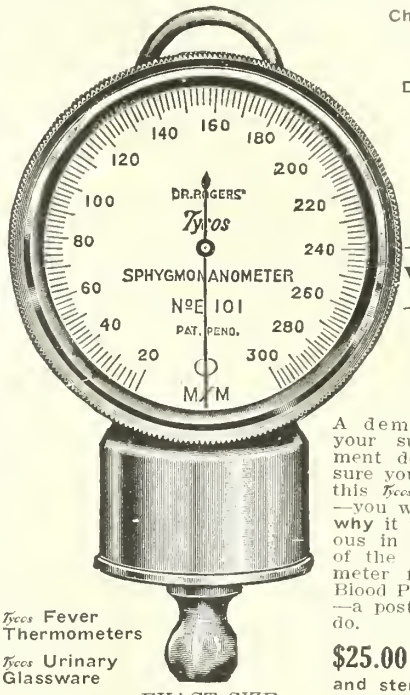

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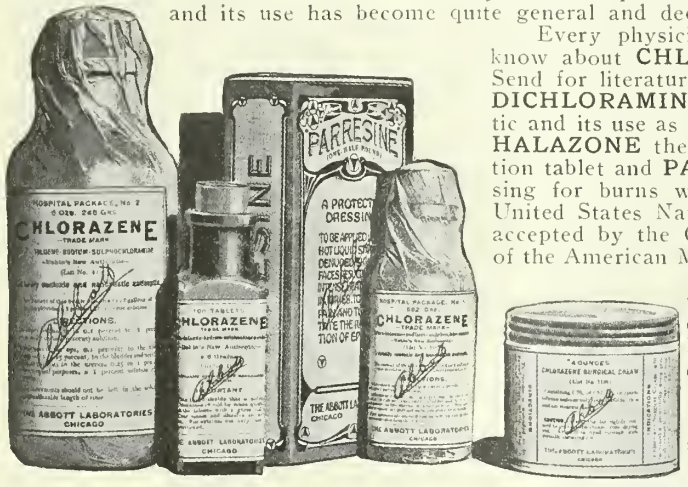

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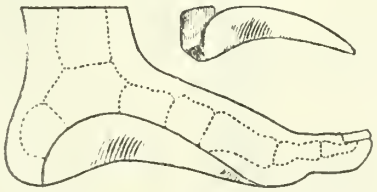

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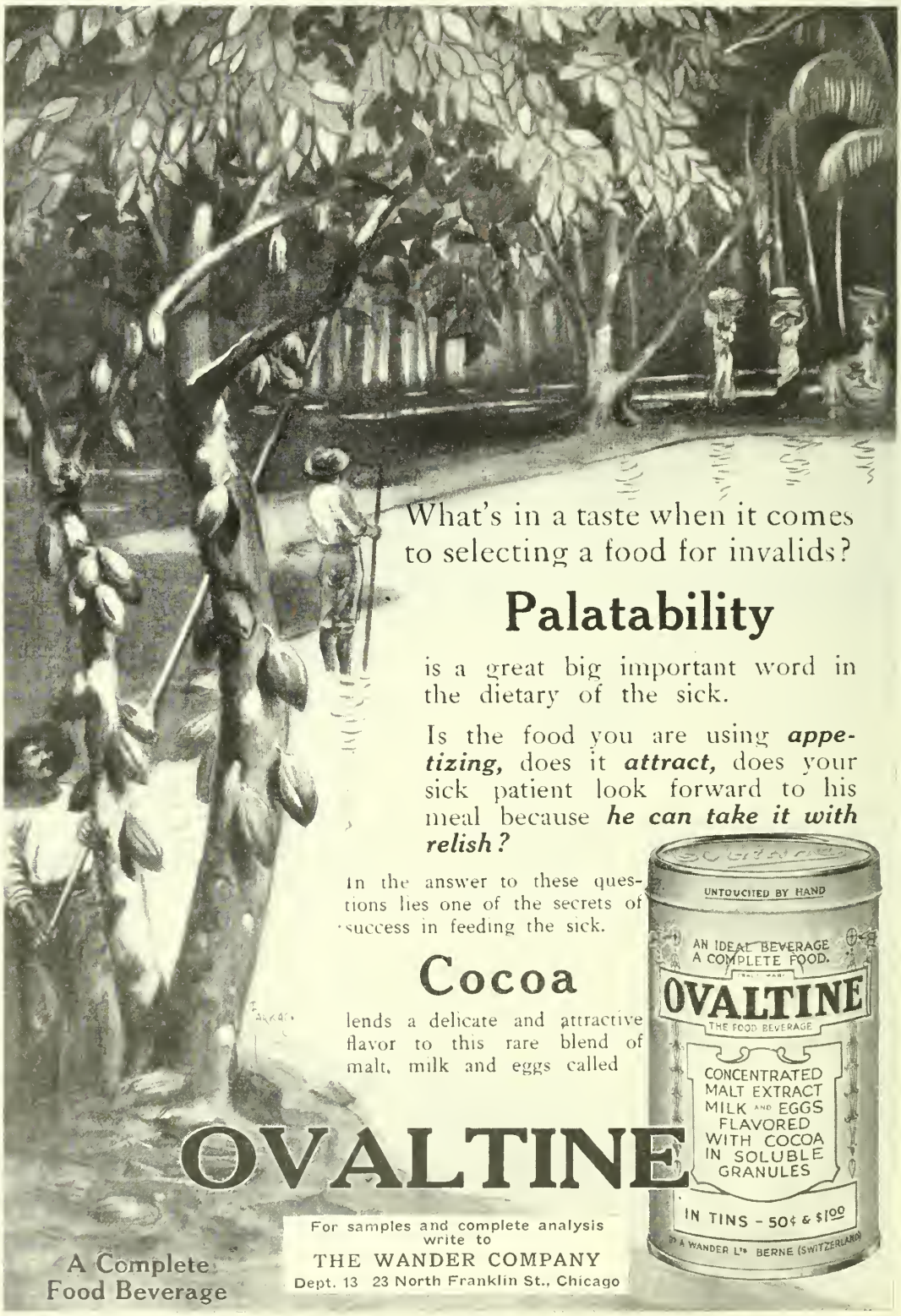

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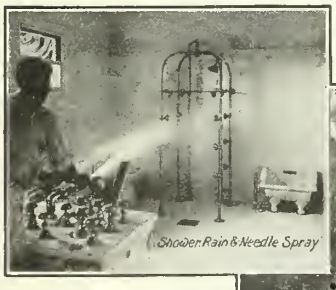

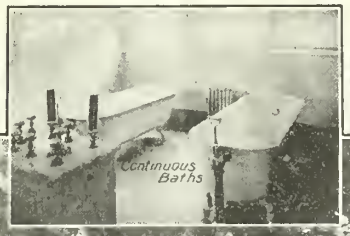

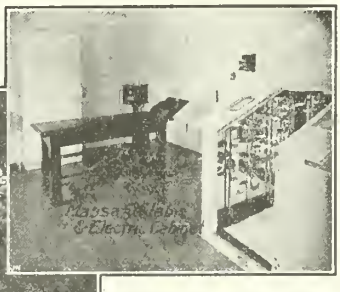

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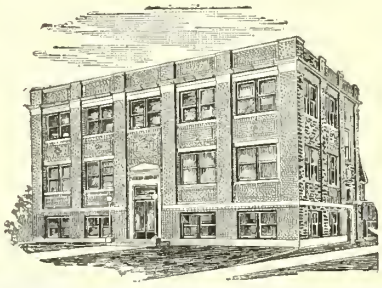

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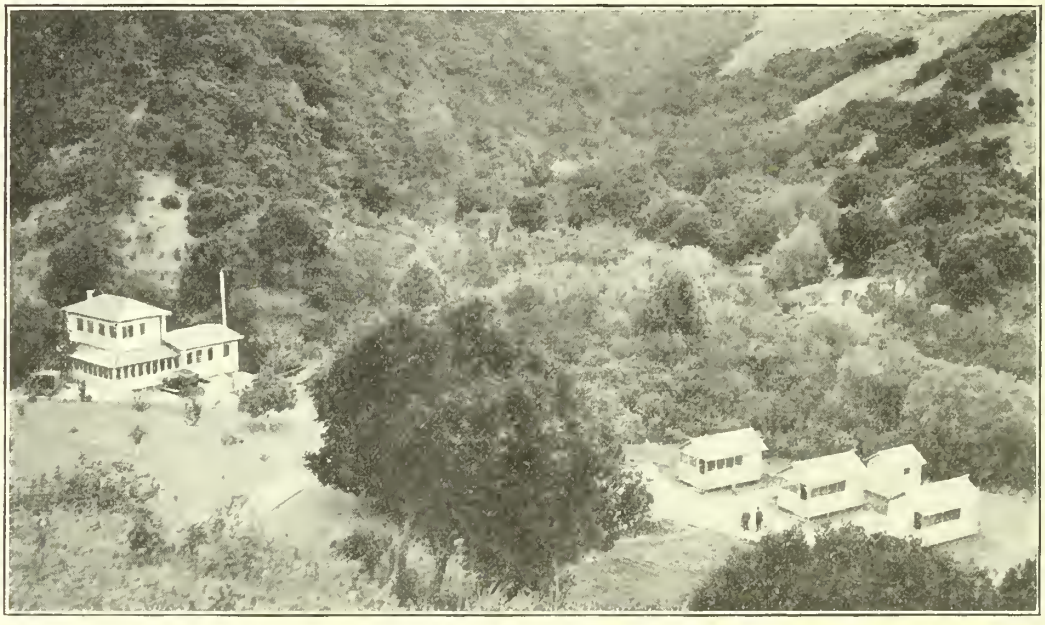

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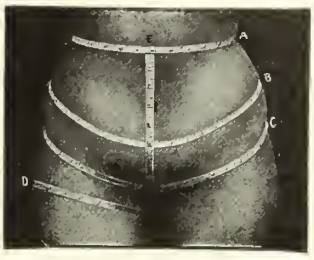

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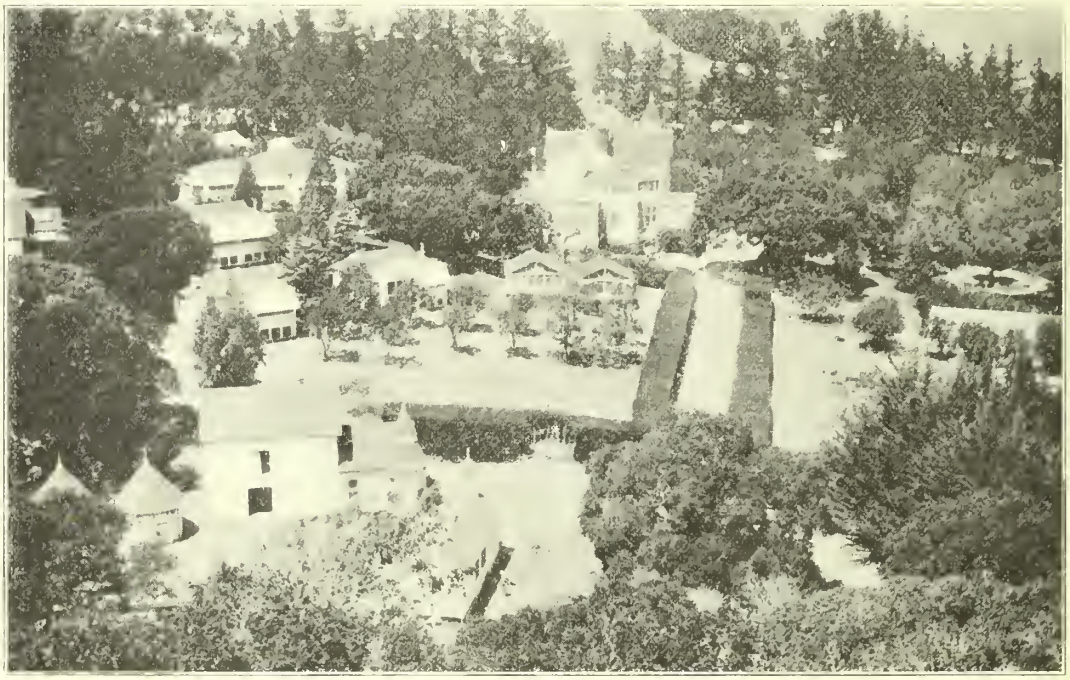

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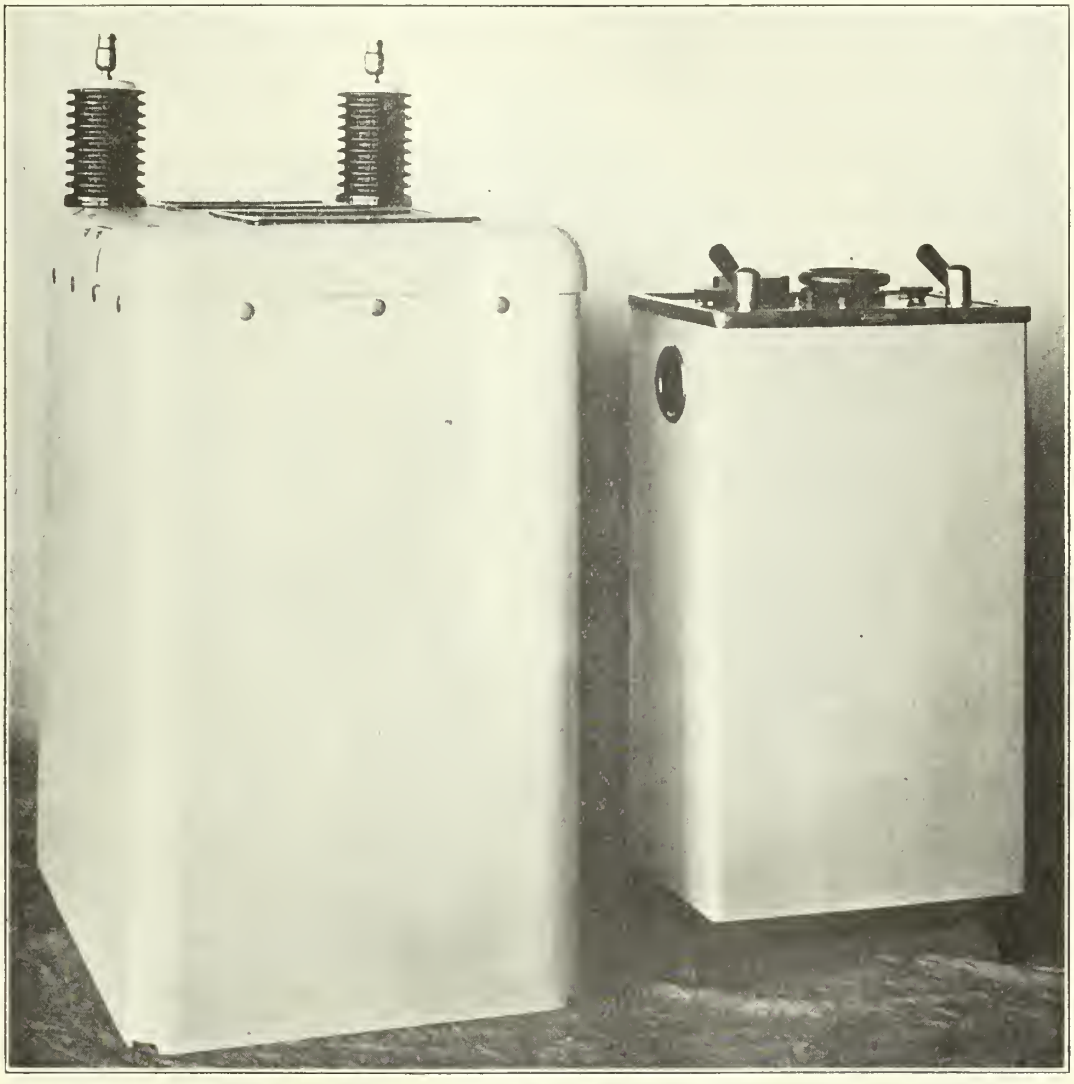

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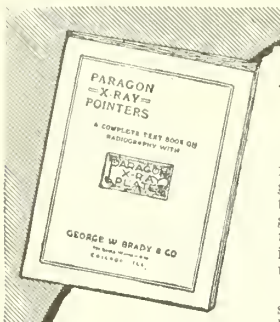

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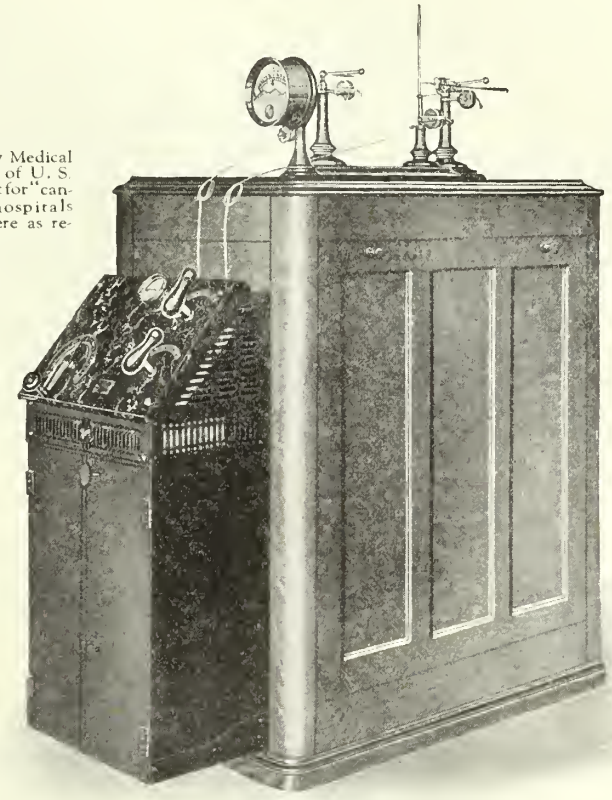

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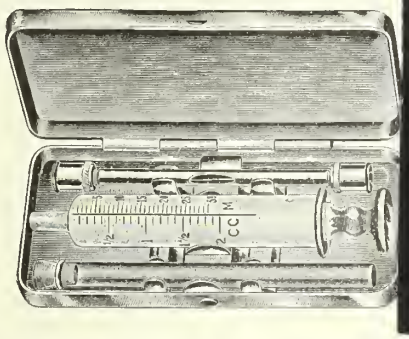

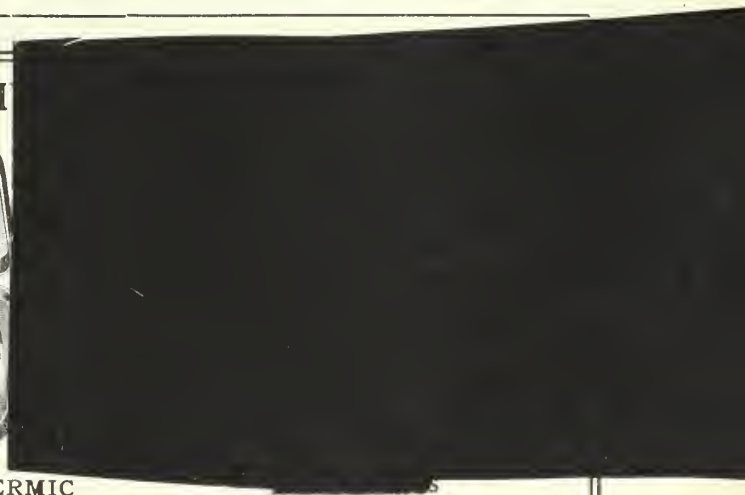

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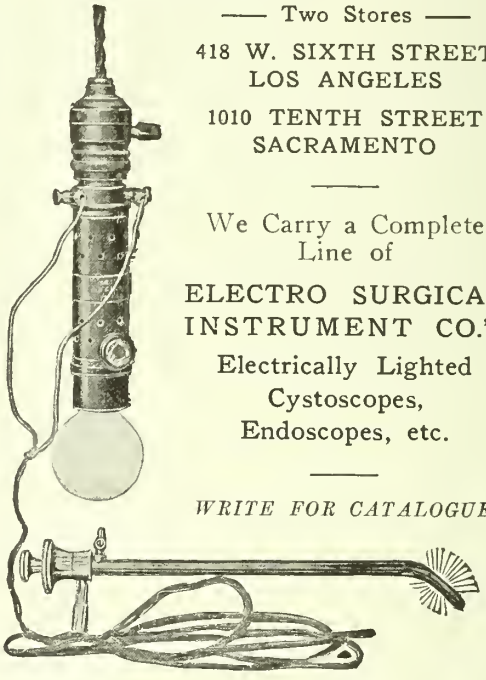

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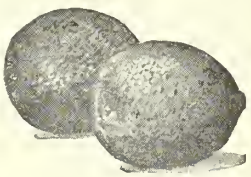
Economical Delights

Jiffy-Jell is easily digested. Its crushed-fruit taste makes it appetizing. It is made in an instant, at a trifling cost. It forms a conveyor for other foods, like whipped cream, nuts, chocolate, vegetables, rice, etc.

Mint flavor makes an ideal relish jell. Lime flavor makes a tart, zestful salad jell. The other fruit flavors give a wide variety of tempting, fruity dainties.



Fruit-Juice Flavors

The flavors for Jiffy-Jell are made from the fruit itself. Not one is artificial.

The flavors come sealed in glass vials, so they cannot change—one vial in each package.

The flavors are abundant. For instance, half a ripe pineapple is used in the flavor for one Jiffy-Jell dessert.

No other gelatine product is accompanied by bottled flavors of this kind.

Please prove these facts in your own home. Let us send you some Jiffy-Jell to try. A request is sufficient.

Jiffy-Jell has been approved by Prof. Allyn of Westfield; also by Dr. Wiley.

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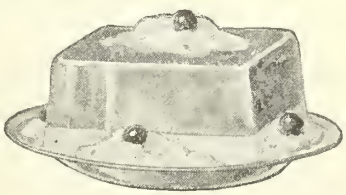

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Each package contains the flavor in separate vial

Strawberry		Orange
Raspberry		Lemon
Loganberry	Lime	Cherry
Mint	Pineapple	Coffee

JOHNNIE JONES AND FIRST AID.

Down State street struttcd Johnnie Jones
  Waiting for baseball news;
For he had bet just fifty bones,
  That the White Sox couldn't lose.

But a newsboy yelled "White Sox are beat!"
  John mattered: "I'm betrayed,"
And fell with a thud upon the street,
  A victim for First Aid.

Now he by five fair dames was spied,
  They reached him in a chase,
"First Aid! First Aid!" they gaily cried,
  "We've waited for a case."

And Mrs. Pump, who stood quite close,
  Said, "Ladics all be cool,
Now I'll take charge and diagnose,
  For that's a First Aid rule.

"He's pale, he lies there prone, he bleeds.
  Pale face means many things,
We must decide just what he needs;
  (Cordelia take my rings)."

"Frostbite, perchance," said Mrs. Prout,
  "The patient's always pale."
"If poisoned food," said Mrs. Stout,
  "Then Frostbite Aid would fail."

Then timidly said Mrs. Ripps,
  "'Tis sunstroke lays men low."
"I fear dogbite," said Mrs. Tipps.
  "They come, they bite, they go."

"In apoplex, or horrid drink,"
  Cried Mrs. Midge, "they're red:
Electric shock is what I think,
  And thcn he may be dead."

Said Mrs. Pump, the staunch first chief,
  "We'll take no risk at all
For all you've said we'll give relief,
  And then a doctor call.

"We'll raise his feet ('tis life or death)
  Go get a chair or stool,
And give him artificial breath,
  A splendid First Aid rule.

"And you said dog bite? Whiskey, quick!
  Now tie the tourniquet!
And you thought heat had made him sick?
  Put on a compress wet!

"Electric shock you diagnosed?
  Then rubber gloves are safe.
Now pull him near a wooden post
  And hard his limbs you chafe.

"'T was poisoned food that was your fear?
  Emetics sans delay!
There's ipecac and mustard, dear,
  I know wc've saved the day.

"As to his head I wish I knew
  Is 't venous blood or not?"
"No, dearest, venous blood is blue,
  And here's a crimson spot!

"Arterial flow! The pressure's found!
  Shoes off, hot bottles there!
The roller bandage came unwound!
  Th' adhesive's in his hair!"

And Johnnie Jones camc slowly to,
  And opc'd a puzzled eye.
"First Aid! First Aid! has pulled him through,"
  The ladies shrilly cry.

And Johnnie Jones felt very sick,
  With mustard in his throat,
The tourniquet felt like a brick,
  And dripping was his coat.

He snatched the bandagc from his head,
  And kicked it on the street,
And wiped the scratch off where it bled,
  And dried his stockingcd feet.

He gently swore, and grabbed his shoes,
  ('Twas rude th' impression madc)
Then cried: "Next time to die I choose,
  God save me from First Aid!"

—H. A. S.

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Call or write Mrs. Florence E. Andrews, 1359 Valencia Street, San Francisco.

An Inguinal Tragedy.

Dramatis Personae:
Queen Hernia.
The Kink of Ileum.
Cardinal Symptoms.
Polly Uria.
Scene: The Right Lower Quadrant.
Time: The Proper.

The omentum rises, disclosing Queen Hernia disguised in Peyer's patches and a submucous coat, seated upon a stool. Anterior horns are heard.

Enter the Kink of Ileum, wearing the royal tunica.

The Queen—How camest thou here?

The Kink—By the levator from the ventricular floor to the pelvic floor, so please your majesty.

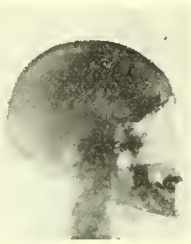
The Queen—Thou liest! When Polly Uria was a-feeding the ducts I saw thee hiding in the crypt.

The Kink—Ach, mein Lieberkuhn! (He staggers against the internal pillar.)

The Queen—Aha! Thou art the Kink?

The Kink—Aye, every inch a Kink!

Seizing a spermatic cord, he strangulates her, quickly tying a Gimbernat. As he sloughs away, the Queen breaks down and ulcerates. Cardinal Symptoms rushes in and reads a Blue Mass. The omentum falls.—J. A. M. A.



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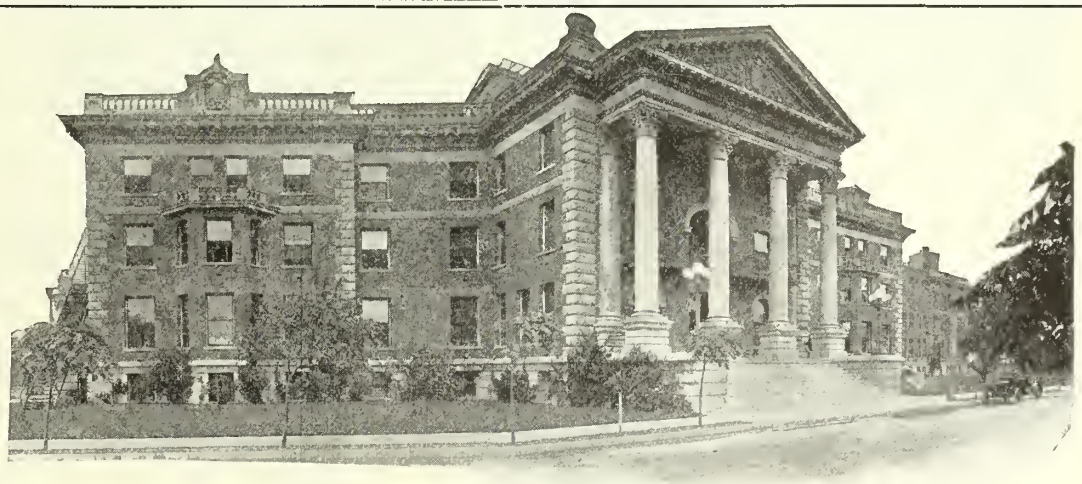

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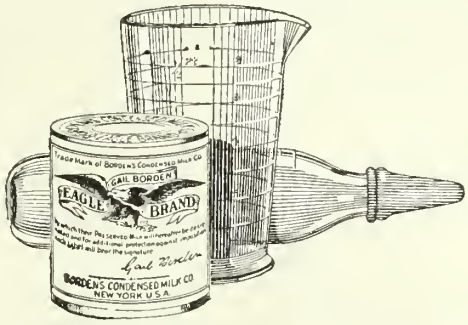

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because its methods are simple, understandable, easy to use, and yield dependably good results. It provides diets suitable for the individual well infant, which cause a normal gain in weight, also efficient corrective diets for digestive disturbances. MEAD'S DEXTRI-MALTOSE is largely used in these diets because it is more readily assimilable than cane sugar or milk sugar, and correspondingly less liable to cause the troubles of sugar fermentation. NO DIRECTIONS for use accompany packages of MEAD'S DEXTRI-MALTOSE. It is made for physicians' use only.

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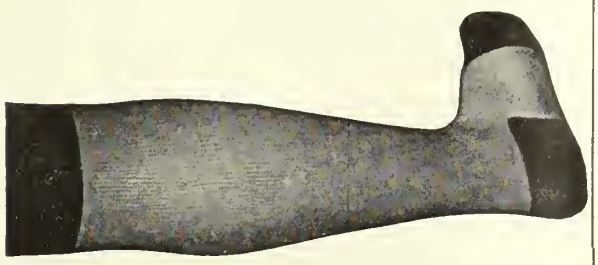

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Hippo Described.

Johnny, who had been to the circus, was telling his teacher about the wonderful things he had seen.

"An' teacher," he cried, "they had one big animal they called the hip—hip—"

"Hippopotamus, dear," prompted the teacher.

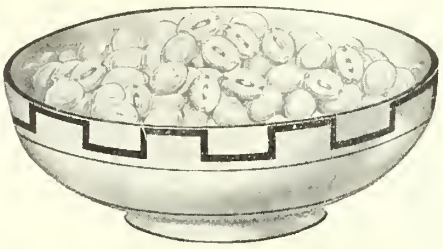
"I can't just say its name," exclaimed Johnny, "but it looks just like 9000 pounds of liver."—Youngstown Telegram.

Like Cures Like.

"Now, Willy," said the mother, "you told me a falsehood. Do you know what happens to little boys who tell falsehoods?"

"No, ma'am," replied Willy sheepishly.

"Why," continued the mother, "a big black man with only one eye in the center of his forehead comes along and flies with him up to the moon, and makes him pick sticks for the balance of his life. Now, you will never tell a falsehood again, will you? It is awfully wicked!"—Ladies' Home Journal.



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The grains are puffed to bubbles, eight times normal size. Every granule is broken for easy digestion.

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The thin, crisp Puffed Grains taste like confections. Yet they are simply whole grains—nothing added.

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A druggist had a violent dispute with his wife, who finally gave way to tears.

"Your tears do not affect me in the least," he said. "I have analyzed them and they contain a little phosphate of calcium and a little chloride of sodium. The rest is only water."—Gaietes de la Medicine.

Slow.

Mr. Briggs called one evening to see his sweetheart, and her little brother, Tom, was entertaining him until the young woman came down.

"Tom, when your sister comes down and is comfortably seated on the couch with me, I want you to tiptoe in softly and turn the gas down low, will you?"

"You're too late," replied the boy. "Sister just told me to come in and turn it out."—Judge.

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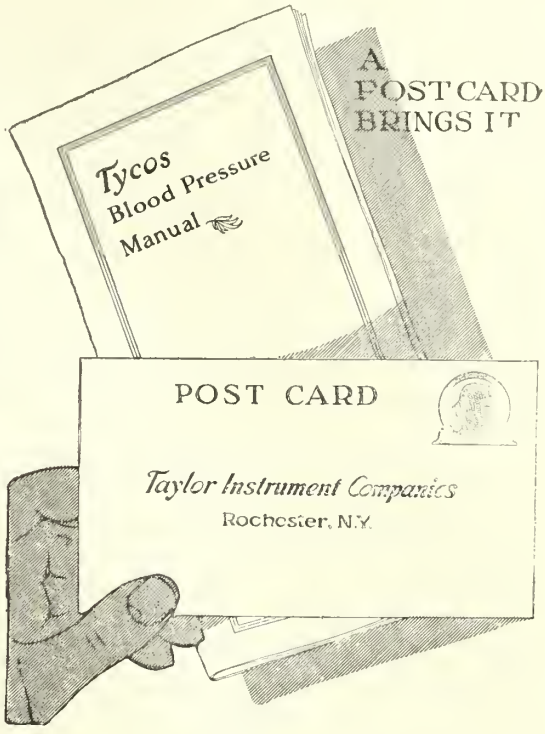

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Advertising forms go to press fifteen days in advance of the date of issue. In sending in copy time must be allowed for setting up advertisements and for sending proofs. No proprietary medicines can be advertised until approved by the Council on Pharmacy and Chemistry. Advertising rates will be sent on request.

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ANONYMOUS CONTRIBUTIONS, whether for publication, for information, or in the way of criticism, are consigned to the wastebasket unread.

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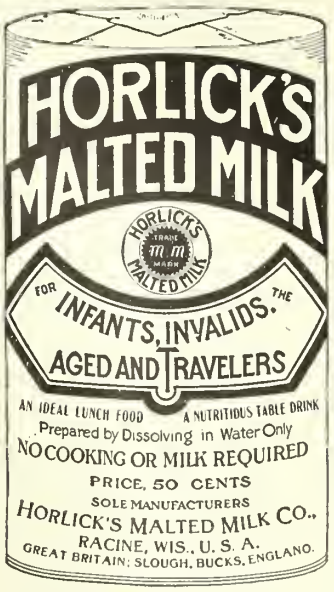

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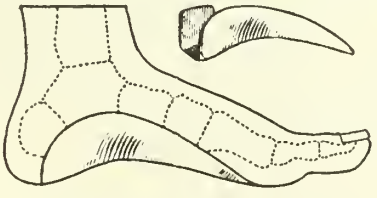

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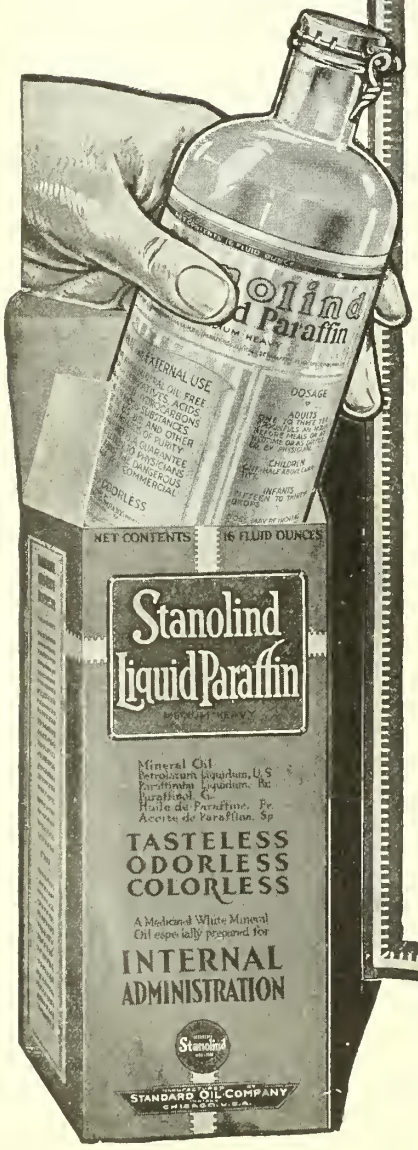

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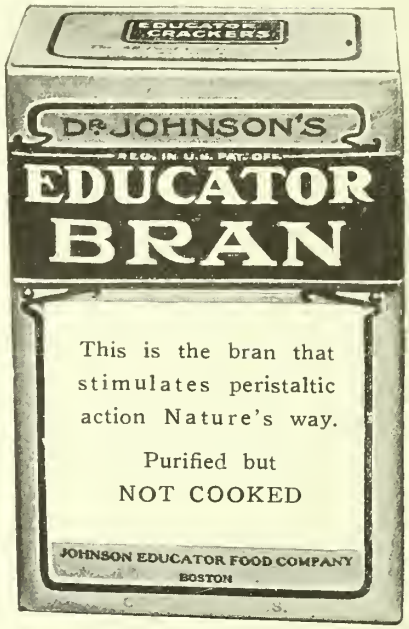

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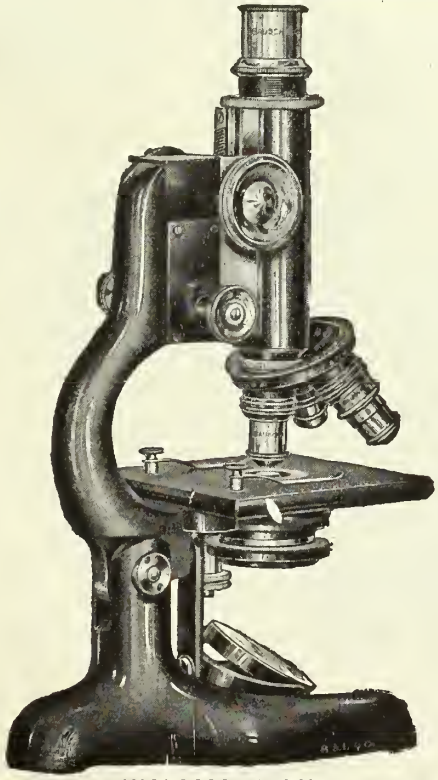

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LIST OF PRESIDENTS AND SECRETARIES OF COUNTY MEDICAL SOCIETIES

Counties.	President.	Secretary.	Meets.
Alameda County Medical Association	R. T. Stratton, Oakland	Elmer E. Brinckerhoff, 1st Nat'l Bank Bldg.	3rd Monday, Oakland Hotel, Oakland.
Butte County Medical Society	J. O. Chiapella, Chico	E. E. Baumeister, Chico	2nd Tuesday.
Contra Costa County Medical Society	P. C. Campbell, Richmond	U. S. Abbott, Richmond	2d Sunday every month.
Fresno County Medical Society	J. L. Maupin, Fresno	C O. Mitchell, Fresno	1st Tuesday.
Glenn County Medical Society	Saml. Iglick, Orland	Frank M. Lawson, Willows	
Humboldt County Medical Society	F. R. Horel, Arcata	L. A. Wing, Eureka	2d Tuesday.
Imperial County Medical Society	L. R. Moore, Imperial	L. C. House, El Centro	
Kern County Medical Society	F. J. Gundry, Bakersfield	C. A. Morris, Bakersfield	3d Monday.
Lassen-Plumas County Medical Society		R. W. T. Garner, Susanville	
Los Angeles County Medical Society	C. C. Browning, Los Angeles	Geo. H. Kress, Los Angeles	1st & 3d Thursday except July, Aug., Sept.
Marin County Medical Society	Waid J. Stone, San Rafael	Harry O. Hund, San Rafael	2d Thursday each month
Mendocino County Medical Society	F. C. Peirsol, Mendocino	O. H. Beckman, Fort Bragg	Meets quarterly.
Merced County Medical Society	D. W. Zirker, Merced	Jay Leroy Mudd, Merced	1st Thursday.
Monterey County Medical Society	H. C. Murphy, Salinas	T. C. Edwards, Salinas	1st Saturday.
Napa County Medical Society	W. L. Blodgett, Calistoga	Otto T. Schulze, Napa	1st Tuesday.
Orange County Medical Association	R. A. Cushman, Santa Ana	W. C. Dubois, Santa Ana	1st Tuesday.
Placer County Medical Society	O. C. Hyde, Lincoln	R. E. Allen, Newcastle	1st Saturday every 2d month.
Riverside County Medical Society	W. S. Davis, Corona	Paul E. Simonds, Riverside	2d Monday.
Sacramento Society for Medical Improvement	C. B. Jones, Sacramento	W. A. Beattie, Sacramento	3d Tuesday.
San Benito County Medical Society	L. C. Hull, Hollister	F. O. Nash, Hollister	1st Monday.
San Bernardino Medical Association	B. F. Church, Redlands	Chas. L. Curtiss, Redlands	1st Tuesday.
San Diego County Medical Society	H. C. Oatman, San Diego	G. T. Courtenay, San Diego	1st and 3d Tuesdays.
San Francisco County Medical Society	A. H. Giannini, San Francisco	René Bine, San Francisco	Every Tuesday.
San Joaquin County Medical Society	C. R. Harry, Stockton	Dewey R. Powell, Stockton	4th Friday, except July and August.
San Luis Obispo County Medical Society	R. O. Dresser, Paso Robles	A. H. Wilmar, Paso Robles	1st Saturday of each month.
San Mateo County Medical Society	F. S. Gregory, Redwood City	J. L. Ross, Redwood City	1st Friday each month.
Santa Barbara County Medical Ass'n	S. P. Low, Santa Barbara	R. M. Clarke, Santa Barbara	2d Monday.
Santa Clara County Medical Society	J. C. Blair, San Jose	Ed. Newell, San Jose	1st & 3d Wednesdays
Santa Cruz County Medical Society	H. E. Piper, Santa Cruz	A. N. Nittler, Santa Cruz	1st Monday.
Shasta County Medical Society	F. Stabel, Dunsmuir		Meets quarterly.
Siskiyou County Medical Society	C. W. Nutting, Etna Mills	H. R. Parker, Dunsmuir	Meets 1st Monday each quarter.
Solano County Medical Society	J. W. Brownlie, Vallejo	Paul Reilly, Vallejo	3d Wednesday.
Sonoma County Medical Society	M. B. McAulay, Petaluma	Elizabeth M. Yates, Santa Rosa	1st Friday.
Stanislaus County	F. R. De Lappe, Modesto	E. F. Reamer, Modesto	2d Friday except July and August.
Tehama County Medical Society	F. J. Bailey, Red Bluff	F. H. Bly, Red Bluff	
Tulare County Medical Society	R. N. Fuller, Tulare	A. W. Preston, Visalia	1st Tuesday
Tuolumne County Medical Society	C. E. Congdon, Jamestown	G. C. Wrigley, Sonora	
Ventura County Medical Society	W. J. Lewis, Ventura	C A. Jenson, Ventura	1st Monday.
Yolo County Society for Medical Improvement	H. D. Lawhead, Woodland	L. J. Beebe, Woodland	1st Tuesday, except July, Aug. and Sept.
Yuba-Sutter Counties Medical Society	Allen Gray, Marysville	A. L. Miller, Marysville	Meets every 2 months.

N. B.—Secretaries will please notify Journal office of any changes taking place in their respective counties.

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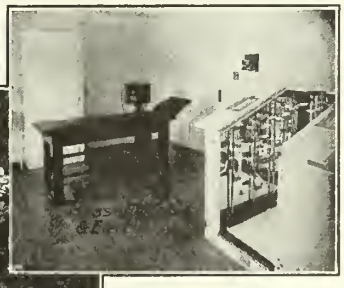

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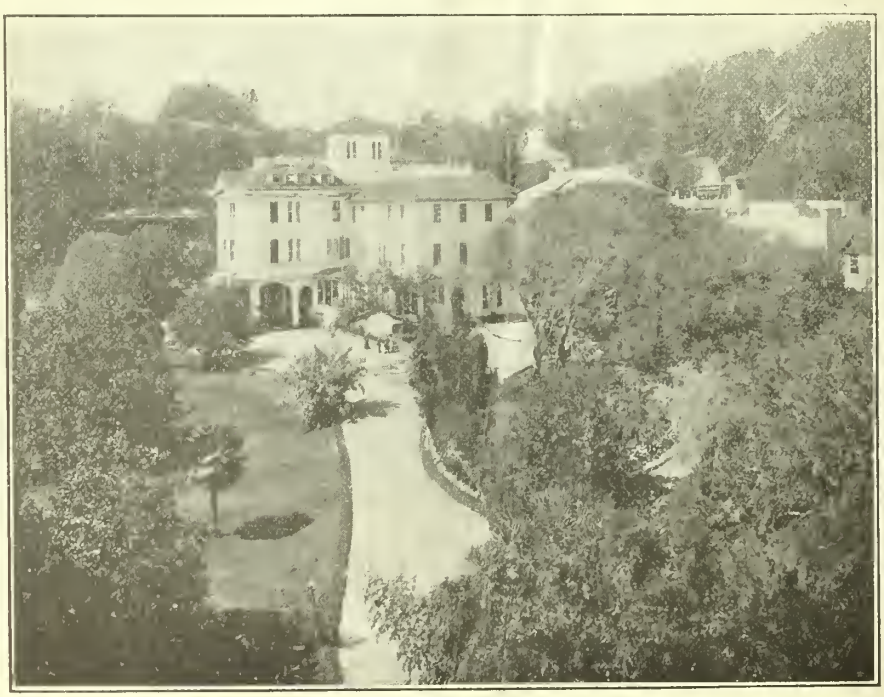

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